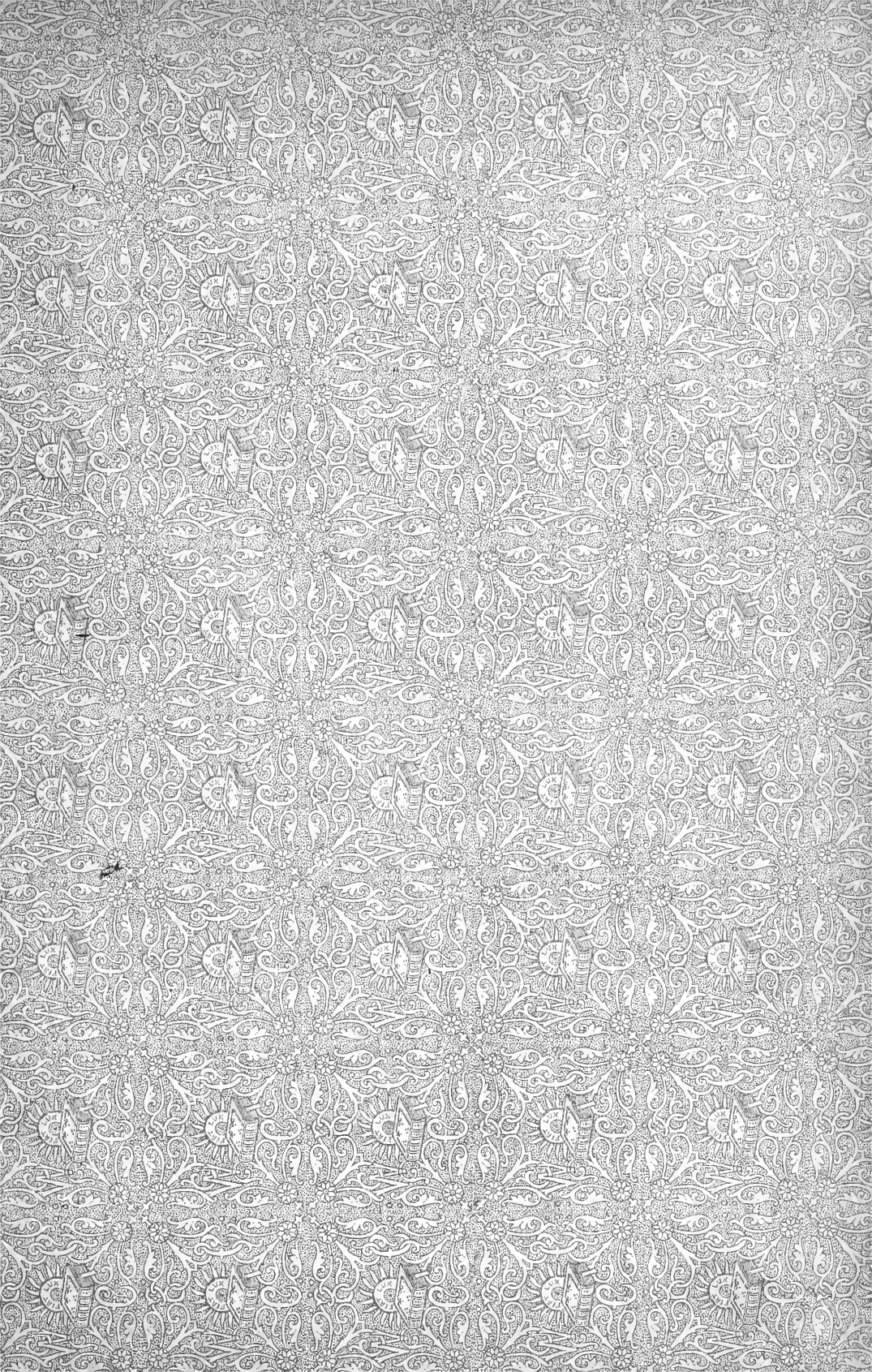


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SMILEY'S MANUAL
OF
PRACTICAL INFORMATION
AND STANDARD
HOUSEHOLD GUIDE.

A Book Adapted to the Every - Day Use of the People, Com-
prising a Treasury of Domestic Recipes, and being
a Reliable Guide for Conducting the
Various Departments of
Household Work.

Smiley, James Bethuel.

APPROPRIATELY ILLUSTRATED.

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PREFACE.

The following pages are the result of many years of experiment, investigation and study. We have aimed to prepare a work for the use of housekeepers on a more thorough and comprehensive plan than has been heretofore attempted. As the book is intended for the use of the average housekeeper, there is nothing in it which cannot be easily understood by any person of ordinary intelligence, for we have taken much pains to present the results of modern scientific investigations in a clear and simple way, avoiding, as far as possible, the use of technical terms. Most of the household books in current use give the processes for doing things merely, with no attempt to explain the *reasons* for the processes or the *principles* which underlie them. We also give as clearly as possible the most detailed directions in all our recipes, but *we do not stop there*, as we think any one can work more intelligently by understanding not only *how* to do a certain thing, but also *why* it is done one way rather than another, and the principles which underlie the process. For this reason throughout the work we systematically explain *principles* as well as processes. We have long felt that a sad defect in most cook books is their utter failure to explain those simple, fundamental principles which every cook should, if possible, understand. If these principles are once thoroughly understood the mystery and uncertainty of kitchen operations will vanish, and cooking will simply be adopting certain clearly understood methods to produce certain definite results, and success will always follow.

Within the last few years much excellent work has been done by the scientists who have been investigating the chemistry of cooking and the chemical composition and nutritive value of the different foods. We have endeavored to clearly present to our readers the most important results of their labors, for we believe the time has come for housekeepers to understand both the composition of foods and their nutritive value, as well as the chemical changes produced in them by the various operations of cooking.

For years we have been gathering material for this book, resulting in the accumulation of a great mass of recipes. These have been culled and tested, and in making selections our rule has been to choose those which were most simple and economical, because the book is primarily designed for the use of the masses, whose means are always limited, and we aim to meet their every day wants, although we present also an ample number of more elaborate recipes suitable for special occasions. Our endeavor has been to make the collection as complete and comprehensive as possible, and to give new, choice and well-tested recipes in every department of household cookery.

In preparing this work we have constantly had four main objects in view. (1) To secure the fullest, latest, and most reliable information possible on the subjects treated. (2) To explain processes and methods for saving time and labor, for the average housewife is sadly overworked and her time and

strength are of the utmost value. (3) To select the best and most economical recipes; and (4) to point out ways to prevent waste.

In the general department of household topics we present a more complete and systematic treatment of the various subjects connected with household management than can be found elsewhere, and the information therein contained will certainly be of great practical value to housekeepers. The effort of the editor has been to produce a thoroughly reliable and comprehensive guide to housekeeping in all its branches, which no housewife can afford to do without. The book has not been written by any one individual, but many pens have been employed more or less in its preparation.

The book will certainly shed much needed light on the problems which confront and often harass housekeepers, explain the fundamental principles which underlie their work, and present a mass of recipes which will materially aid them in their labors, and we are convinced that there is no subject more intimately connected with the welfare of the people than that of housekeeping in its various branches.

THE EDITOR.

TABLE SHOWING THE COMPARATIVE AMOUNT OF NUTRIENTS IN DIFFERENT FOODS.

The following table will show the comparative amount of nutrients, after evaporating the water, remaining in the edible portions of the more important articles of food, *i. e.*, after removing the refuse, like bones, shell, skin, etc. The nutritive value of the different foods, and the elements of which they are composed, are explained more fully elsewhere, but this table will bring clearly before the eye, at a glance, the striking difference in the nutritive value of different foods. In vegetables, one of their great benefits to the system is derived from the potash and other salts which they contain, as we elsewhere explain, and these make little showing in a table like this, but the table will serve to give some idea of the value as food of different articles. There is a lamentable ignorance at the present time regarding the true value to the system of different articles of food, causing much loss, which is especially burdensome to poor people.

MEATS, ETC.

Beef, Brisket of.....	_____
Beef, Dried.....	_____
Beef, Flank of.....	_____
Beef, Flank, Corned..	_____
Beef, Neck of.....	_____
Beef, Ribs of.....	_____
Beef, Shoulder of....	_____
Beef, Sirloin of.....	_____
Beef, Round of.....	_____
Beef, Liver of.....	_____
Beef, Heart of.....	_____
Beef, Tongue of....	_____
Veal, Shoulder of...	_____
Mutton, Breast of...	_____
Mutton, Flank of....	_____
Mutton, Leg of.....	_____
Mutton, Neck of....	_____
Mutton, Shoulder of..	_____
Lamb, Leg of.....	_____
Lamb, Loin of.....	_____
Lamb, Neck of.....	_____
Lamb, Shoulder of..	_____
Pork, Shoulder roast	_____
Pork, fat, salt	_____
Pork, smoked ham..	_____
Sausage, Pork.....	_____
Tripe, soured.....	_____
Chicken.....	_____
Turkey.....	_____
Eggs, Hen's.....	_____

FISH AND SHELL-FISH.

Bass, black.....	_____
Blue Fish.....	_____
Codfish, fresh.....	_____
Codfish, salt.....	_____
Eel, salt water.....	_____
Flounder.....	_____
Haddock.....	_____
Haddock, smoked.....	_____
Halibut, fresh.....	_____
Halibut, smoked.....	_____
Herring, fresh.....	_____
Mackerel, fresh.....	_____
Mackerel, salted.....	_____
Salmon, fresh.....	_____
Sardines, canned.....	_____
Trout, brook.....	_____
Whitefish.....	_____
Clams.....	_____
Lobsters, fresh.....	_____
Oysters, fresh.....	_____
Shrimp.....	_____

DAIRY PRODUCTS.

Milk.....	_____
Butter.....	_____
Cheese, full cream..	_____
Cheese, skim milk..	_____
Oleomargarine	_____

VEGETABLES.

Asparagus.....	_____
Beans, Lima, green..	_____
Beans, string, green..	_____
Beans, dried.....	_____
Beets.....	_____
Cabbage.....	_____
Carrots.....	_____
Cauliflower.....	_____
Cucumber.....	_____
Corn, sweet, green ..	_____
Corn, sweet, canned	_____
Egg Plant.....	_____
Lettuce.....	_____
Onions.....	_____
Okra.....	_____
Peas, green.....	_____
Peas, dried	_____
Potatoes.....	_____
Potatoes, sweet.....	_____
Pumpkin.....	_____
Rice.....	_____
Spinach.....	_____
Squash.....	_____
Turnips.....	_____
Tomatoes.....	_____

CEREALS, ETC.

Barley, pearl.....	_____
Flour, graham.....	_____
Flour, entire wheat..	_____
Flour, buckwheat...	_____
Flour, rye.....	_____
Flour, wheat.....	_____
Cornmeal.....	_____
Oatmeal.....	_____
White hominy.....	_____
Buckwheat farina...	_____
Bread, graham.....	_____
Bread, rye.....	_____
Bread, wheat.....	_____
Boston crackers....	_____
Graham crackers....	_____
Oatmeal crackers....	_____

FRUITS.

Apples.....	_____
Bananas.....	_____
Blackberries.....	_____
Cherries.....	_____
Cocoanuts.....	_____
Cranberries.....	_____
Grapes.....	_____
Lemons.....	_____
Peaches....	_____
Pineapples.....	_____
Strawberries.....	_____
Watermelon	_____
Whortleberries.....	_____
Walnuts.....	_____

TABLES OF WEIGHTS AND MEASURES.

NOTICE.—The standard of measure which we have adopted in this book is the ordinary coffee cup, which holds $\frac{1}{2}$ pint. Where not otherwise specified, we always mean that by a cup. Of course the size of the cups and spoons in actual use vary somewhat, and extraordinary dampness or dryness of the materials will affect their weight, but these tables are as accurate as we can make them. In making up any recipe, using the same measure throughout will keep the proportions correct.

Before measuring sugar, meal, flour, soda, salt and spices, they should be sifted. Materials like baking powder or mustard, which have been packed, should be stirred and crushed if you do not sift them.

To get $\frac{1}{2}$ a spoonful, fill the spoon, divide it through the center lengthwise, and use one half. To get an even spoonful of any dry material, fill the spoon and level it off with a knife. A heaping spoonful is all it will hold. To get a spoonful, fill the spoon and shake it a little until it is slightly rounded on top.

As a cup is smaller at the bottom than at the top, $\frac{1}{2}$ a cup does not mean to fill it $\frac{1}{2}$ the way up, but a little more than that. The tin measuring cups holding $\frac{1}{2}$ pint, and divided into fourths and thirds, are the best to use; they can be purchased at tin or hardware stores.

Throughout the work, to save space we drop off the "ful" in such words as "cupful," "tablespoonful," etc., and write simply "cup," "tablespoon," etc. We always mean full measure unless we add the word "heaping," or "scant."

COMMON ARTICLES OF FOOD.

BARLEY:—1 cup weighs 4 ounces; 1 tablespoon, heaped, $\frac{1}{2}$ ounce.
BREAD CRUMBS, grated:—1 cup weighs 2 ounces.
BUTTER:—1 even cup, hard or melted, weighs 7 ounces; a rounded tablespoon weighs 1 ounce; the "size of an egg" weighs 2 ounces.
COFFEE, ground:—4 cups weigh 1 pound; 1 cup weighs 4 ounces; 2 rounded tablespoons weigh 1 ounce.
CORNMEAL:—1 even cup weighs $4\frac{1}{2}$ ounces; a heaping tablespoon $\frac{1}{2}$ ounce.
CORN-STARCH:—1 cup weighs 8 ounces; a heaping tablespoon $\frac{1}{2}$ ounce.
CURRENTS:—1 cup, cleaned and dried, weighs 6 ounces.
EGGS:—10 eggs, average size (or 9 if very large) weigh 1 pound; 1 white of egg weighs about 1 ounce, and 1 yolk about 1 ounce.
FLOUR (wheat, well sifted always):—1 quart, heaped, weighs 1 pound; 1 cup level, weighs 4 ounces, or 6 ounces when heaped; 1 tablespoon, heaped, holds 1 ounce; 1 teaspoon, heaped, $\frac{1}{2}$ ounce.
LARD:—Same as butter.
MEAT:—1 solid cup of chopped meat weighs 8 ounces; a pint=1 pound.
NUTMEGS:—5 medium sized nutmegs weigh 1 ounce.
RAISINS:—1 cup weighs $\frac{1}{2}$ pound, or 8 ounces.
RICE:—1 cup weighs 8 ounces; 1 tablespoon, heaped, $\frac{1}{2}$ ounce.
SALT:—A "pinch" = 1 saltspoon.
SAGO:—1 cup weighs 8 ounces; 1 tablespoon, heaped, $\frac{1}{2}$ ounce.
SUET:—Same as butter.
SUGAR, granulated, or dry brown:—1 cup, heaped, weighs 8 ounces; 1 tablespoon, heaped, $\frac{1}{2}$ ounce.
TEA:—1 cup, heaped, weighs 2 ounces; 1 tablespoon, heaped, weighs $\frac{1}{4}$ ounce; 1 teaspoon, heaped, $\frac{1}{8}$ ounce.

LIQUIDS.

CREAM:—1 cup holds $\frac{1}{2}$ pint and weighs 7 ounces.
MILK:—1 cup holds $\frac{1}{2}$ pint and weighs 8 ounces.
MOLASSES:—1 cup holds $\frac{1}{2}$ pint and weighs 12 ounces.
VINEGAR:—1 cup holds $\frac{1}{2}$ pint and weighs 8 ounces.
WATER:—1 cup holds $\frac{1}{2}$ pint and weighs 8 ounces.

MEASURING CUPS, ETC.

CUP:—1 cup holds $\frac{1}{2}$ pint or 8 fluid ounces, or 16 tablespoons or 32 teaspoons; 1 cup holds 7 ounces of lard or butter, 4 oz. of flour (when heaped 6 oz. flour or 4 of coffee); 2 ounces of tea and 8 ounces of raisins.
BASTING-SPOON:—4 basting-spoons make 1 cupful; 1 basting-spoon equals 4 tablespoons or 8 teaspoons.
TABLESPOON:—1 tablespoon holds $\frac{1}{2}$ ounce of water; 8 tablespoons liquid make 1 gill; 16 tablespoons liquid make 1 cupful; 1 tablespoon, heaped, holds $\frac{1}{2}$ ounce of barley, corn-meal, corn-starch, ground spice, flour, sago, sugar; and $\frac{1}{4}$ ounce of ground coffee, and $\frac{1}{4}$ ounce of tea.
TEASPOON:—1 teaspoon holds $\frac{1}{2}$ tablespoon; 16 teaspoons liquid make 1 gill, and 32 teaspoons liquid make 1 cup. 1 teaspoon holds $\frac{1}{4}$ ounce of ground coffee, and $\frac{1}{8}$ ounce of tea, and $\frac{1}{2}$ of the other articles given above for a tablespoon.
A TUMBLER, common size, holds $\frac{1}{2}$ pint, or 8 fluid ounces.
A WINE GLASS, common size, holds $\frac{1}{2}$ gill, or 2 fluid ounces.

AVOIRDUPOIS WEIGHT.

16 drams (dr.) make 1 ounce (oz).
 16 ounces make 1 pound (lb).
 25 pounds make 1 quarter (qr.).
 4 quarters make 1 hundred weight (cwt.).
 20 hundred weight make 1 ton (T.).

LIQUID OR WINE MEASURE.

4 gills make 1 pint (pt).
 2 pints make 1 quart (qt.).
 4 quarts make 1 gallon (gal.).
 31 $\frac{1}{2}$ gallons make 1 barrel (bbl.).
 63 gallons make 1 hoghead (hhd.).
 2 hogheads make 1 pipe or butt (pi.).

DRY MEASURE.

2 pints make 1 quart.
 8 quarts make 1 peck.
 4 pecks make 1 bushel.
 8 bushels make 1 quarter.

CLOTH MEASURE.

2¼ inches make 1 nail.
4 nails make ¼ yard.
4 quarters make 1 yard.
3 quarters make 1 Ell Flemish.
5 quarters make 1 Ell English.

Cloth Measure is little used at present. In measuring goods sold by the yard, it is divided into halves, quarters, eighths and sixteenths.

LINEAR MEASURE.

12 inches=1 foot.
3 feet=1 yard.
5½ yards=1 rod or pole.
40 rods=1 furlong.
8 furlongs=1 mile.
3 miles=1 league.
3 barley-corns=1 inch.
4 inches=1 hand.
9 inches=1 span.
21,888 inches=1 sacred cubit.
18 inches=1 English cubit.
6 feet=1 fathom.
120 fathoms=1 cable's length.
6086.7 feet=1 knot.
3 feet=1 pace.
1,152½ common miles=1 geographical mile.
3 geographical miles=1 league.
60 geographical miles=1 degree.
360 degrees=the circumference of the globe.

THE METRIC SYSTEM.

Measures of Weight.

1 milligramme=0.015432 grains.
1 gramme=15.432 grains.
1 decagramme=0.022046 pounds.
1 hectogramme=0.22046 pounds.
1 kilogramme=2.2046 pounds.
1 myriagramme=22.046 pounds.

Measures of Capacity.

1 millilitre=0.0610 cubic in.=338 fluid oz.
1 litre=1.0567 quarts.
1 dekalitre=2.6417 gallons.
1 hektolitre=26.4175 gallons=2.84 bushels.
1 kilolitre=264.175 gallons=23.37 bushels.

Measures of Length.

1 millimetre=0.03937 inch.
1 centimetre=0.3937 inch.
1 metre=39.37 inch.
1 decametre=32.809 feet.
1 hectometre=328.09 feet.
1 kilometre=.6213 mile.
1 myriametre=6.2138 mile.

MEDICINAL TERMS AND APOTHECARIES WEIGHTS AND MEASURES.

Measures.

60 minims (M) or drops=1 fluidrachm (ʒ ʒ.)
8 fluidrachms=1 fluid ounce (ʒ ʒ.)
16 fluid ounces=1 pint (O.)
8 pints=1 gallon (Cong.)

Weights.

20 grains (gr. xx)=1 scruple (ʒ or sc.)
3 scruples (ʒ iiij)=1 drachm (ʒ or dr.)
8 drachms (ʒ viij)=1 ounce (ʒ or oz.)
12 ounces (ʒ xij)=1 pound (lb.)

Physicians in writing prescriptions use the Roman numerals instead of figures, but the small letters only, which they precede by the symbols. They write j for i when it terminates a number. Thus ʒ viij means 7 ounces, ʒ xiv means 14 scruples, etc. R is an abbreviation for recipe, or take; P for *particula*, or little part; q. s. quantity sufficient; P. æq. for equal parts; q. p. as

much as you please; gr. for grain; ss. for *semi*; ā, aa. for equal quantities; ij. for 2; gtt is a drop; Cong. is an abbreviation of *congius*, the latin for gallon; O. for *octarius*, the latin for one-eighth. The *minim* is equal to a drop of water; a *pint* of water weighs a pound.

MISCELLANEOUS TABLES COMPRISING VARIOUS THINGS WORTH KNOWING.

COUNTING.—12 units make a dozen; 12 dozen make a gross; 12 gross make a great gross. 20 units make a score.

PAPER.—24 sheets make 1 quire; 20 quires make 1 ream; 2 reams make 1 bundle.

BOOKS.—A sheet of paper folded in two leaves makes a folio or 4 pages; in four leaves a quarto, 4 to, or 8 pages; in 8 leaves an octavo, 8 vo, or 16 pages; in 12 leaves, a duodecimo, 12 mo, or 24 pages; in 16 leaves, a 16 mo, or 32 pages; in 18 leaves an 18 mo, or 36 pages. These terms are applied without regard to the size of the sheet folded, which may vary widely.

Apples, dried, a bushel=22 to 28 lbs.*
Barley, a bushel=48 lbs (in most states).
Beans, a bushel=60 lbs.
Beef, a barrel=200 lbs.
Buckwheat, a bushel=40 to 52 lb
Butter, a firkin=56 lbs.
Butter, a tub=84 lbs.
Bran, a bushel=20 lbs.
Clover seed, a bushel=60 lbs.
Corn, a bushel, shelled=56 lbs (in most states).
Corn, a bushel, on the cob=70 or 68 lbs.*
Flaxseed, a bushel=55 or 56 lbs.*
Fish, a quintal=100 lbs.
Fish, a barrel=200 lbs.
Feathers, a bale=about 1 cwt.
Flour, a barrel=196 lbs.
Honey, a gallon=12 lbs.
Meat, a stone=80 lbs.
Molasses, a hogshead=130 to 150 gallons.*
Oats, a bushel=32 lbs (in most states).
Onions, a bushel=48 to 57 lbs.*
Peaches, dried, a bushel=28 to 33 lbs.*
Potatoes, a bushel=60 lbs.
Pork, a barrel=200 lbs.
Rice, a barrel=600 lbs.
Raisins, a barrel=112 lbs.
Rye, a bushel=56 lbs.
Salt, a barrel=280 lbs.
Salt, a bushel=70 lbs.
Soap, a barrel=256 lbs.
Soap, a box=75 lbs.
Soap, a firkin=64 lbs.
Sugar, a barrel=200 to 250 lbs.*
Tea, a chest=60 to 84 lbs.*
Timothy seed, a bushel=45 lbs. (in most states).
Tobacco, a hhd.=168 lbs.
Wool, a tod=28 lbs.

*Varying in different states.

DEGREES OF HEAT FROM FUEL.

Coal produce 1000° F.; wood (hard) 800° to 900°; charcoal (ordinary) 700°; charcoal (willow) 600°.

INTRODUCTION.

"We grow like what we eat. Bad food depresses. Good food exalts us like an inspiration."

Primitive man did not cook. Although the origin of man is veiled in obscurity, and the habits and customs of the earliest races are somewhat conjectural, all the indications are that for an indefinite period primitive man must have lived largely on raw nuts and fruits. Then, in his slow, upward advance, his earliest weapons were clubs or rude stone implements, with which he killed animals, whose flesh he tore apart and devoured raw. When by some happy accident primitive man discovered fire, it marked the dawn of a new era for him. It was undoubtedly one of the most important and beneficial discoveries ever made by the race. Many savage races have been discovered even in recent times who were unacquainted with fire, and who, on seeing it, regarded it with a superstitious feeling of awe, and attributed to it some form of life. Fire having been discovered, men must have tried to dry and roast their food. Probably burying seeds and meat in hot ashes was the earliest form of cooking. This would improve its flavor and make it more easily eaten, but it would befoul the food more or less. Then man hit on the plan of suspending his meat on spits above the fire, and so grilling arose. It is not probable that even in the days of Homer the art of cookery was much advanced beyond this stage, for nowhere in his poems does he speak of *boiled* meat, although in the "Iliad" we read that the great Achilles and his friend Patroclus regaled the three Grecian leaders with bread, wine and *broiled* meat. The Jews, however, early learned the art of boiling, and they had kettles, in one of which the mess of pottage for which Esau sold his birthright to Jacob, must have been boiled. As civilization advanced, the art of cookery slowly developed, until, in the days of Roman luxury (about the time of the birth of Christ) it attained great prominence, and Athenæus has preserved the names of the authors of many cook books, Archestratus being probably the first, as he was certainly the most famous. Men of note from the island of Sicily became the most celebrated cooks, and commanded great prices for their services.

The cereals (named from Ceres, the goddess of agriculture) were early known to the race. The Assyrians, Egyptians and Greeks used to make bread in which oil, with aniseed and other spices, was an element, but it was unleavened. Tradition says that somewhere about the 30th Olympiad (about 724 B. C.) the slave of an archon at Athens left some wheaten dough in an earthen pot and forgot it. Some days afterwards he found it, but it was turning sour and he was about to throw it away, when his master appeared, and so he mixed it with some fresh dough on which he was working. The bread produced by this dough in which alcoholic fermentation had begun was found delicious by the archon and his friends, and when the slave was summoned, he told his secret. Thus leavened bread was discovered by accident. The news spread rapidly, a great demand for the new bread sprang up, and certain persons set up as bread makers (the first bakers) and "Athenian bread" soon became famous throughout Greece. Down as late as the Roman Emperors, however, no bolted flour was known, and to this day, in many parts of Germany the entire meal is used.

The common people among the Greeks ate a kind of barley-gruel, which was a national dish and was made as follows:—"Dry near the fire in the oven 20 lbs. of barley flour; then parch it; add 3 lbs. linseed meal, $\frac{1}{2}$ lb. coriander seed, 2 oz. salt, and the quantity of water necessary." To this a little millet was sometimes added to give the paste greater cohesion and delicacy. Oatmeal was used by the Greeks and Romans, and so was rice, which they considered beneficial to the chest. Wheat was used, and a favorite Carthaginian pudding (which was also a favorite with the Romans) was made with wheat flour as follows:—"Sift the flour and, with some water, put it into a wooden vessel, and for 10 days renew the water twice each day; then press out the water and put the paste in another vessel; reduce it to the consistency of thick lees, pass it twice through a piece of linen; then dry it in the sun and boil it in milk; season according to taste."

The ancient Egyptians cultivated very much the same agricultural products as at the present day, and the same is true of the Greeks, and we find the vine, the fig, the olive, the apple and other fruits, mentioned by the ancient writers. In the vegetables used for food there has been much more change in modern times than with the cereals. Every one knows that the potato was introduced after the discovery of America, but many other vegetables now in common use were unknown to our forefathers even a few generations back, and the fruits then in common use were very different from those now in popular favor. Prof. Thord Rogers, writing of the condition of things in England four or five centuries ago, says: "Scurvy in its most violent forms, and leprosy, modified perhaps by the climate, were common disorders, for, as has often been said, the people lived on salt meat half the year, and not only were they without the potato but they do not appear to have had other roots now in common use, as carrots and parsnips. Onions and cabbage appear to have been the only esculent vegetables. . . . Spices, the cheapest of which was pepper, were quite out of their reach. Sugar was a very costly luxury, and our forefathers do not appear, judging from the scarcity of the notices, to have been very skillful in their management of bees." How would our readers like to get along without sugar and spices, and with no esculent vegetables but the onion and cabbage!

If we turn from the past to the cookery of the present day, we find that each nation has its own peculiarities. Among some of the European nations the art of cookery has been carried to a high degree of perfection, and we might learn many valuable lessons by a study of their methods. One thing in which they excel is in their use of soups. Soups are not a luxury, nor are they the last resort of poverty, and all classes in Europe regard them as a necessary part of their dinner. Americans might use them more generally to advantage. We elsewhere discuss the peculiarities of the cookery of the leading nations of Europe.

When we consider the onerous duties of the housekeeper, who in the majority of cases is also the cook, we cannot over-estimate the importance of her position, holding as she does in her keeping, in a great degree, the welfare, health and happiness of her household. She has the general care of the home; she must provide apparel for her family, suited to the varying seasons, and must prepare or supervise the preparation of 3 meals per day for 365 days in the year. This last division involves on the part of the housekeeper an appalling amount of mental as well as physical labor, and it is hoped the recipes for cooking which we give, will greatly assist her in this department.

Count Rumford, "clear of thought, and straight of vision," remarked that "the number of inhabitants who may be supported in any country upon its internal products, depends as much upon the state of the art of cookery, as upon that of agriculture." If cookery be of so much importance, it ought certainly to be studied with the greatest care. If any work requires "eternal vigilance," it is cookery. There are so many ways where a little variation in quality of ingredients; a little time lost just when some article of food needs attention or the fuel fails to burn as expected, that one must, for the time being, give it undivided thought. Although some processes require more attention than others, none can be properly performed if left long to itself. A good cook is pretty frequent in her visits to the fire to see how the operation is going on, and to seize the proper moment in giving her assistance.

The model cook should be neat in her apparel; dress her hair in a tidy manner and always in her *own room*; the toilet should never be made in the kitchen,

neither wholly, nor in part. Her hands and nails should be scrupulously clean; if there is no time to attend particularly to the nails, they should be cut so short that no special care is needed for them, aside from the use of a nail-brush. Long, black finger-nails on the hands of a cook, are not appetizing to those who partake of her food.

A good cook is never wasteful, for the reason that she knows how to turn everything to account. A few scraps of cold meat may be minced, nicely flavored, and with an egg and a few bread crumbs, dainty rissoles, or croquettes, can be made. Cold vegetables, scraps of meat and cold fish, can be made into salads, or hashes, that are liked by most people.

While cooking, a clean towel, and a dish-pan of hot water constantly at hand in the sink is indispensable. It is convenient for washing any utensil that may be needed while at work, and in it the hands may be cleansed from time to time if they become smeared; there are also many spare minutes while baking, when dishes no longer needed may be washed and put away, thus making lighter the task of cleaning up when all is done.

Punctuality in serving meals cannot be too much insisted on. As soon as possible after one meal, preparation and forethought for the next will greatly facilitate this desirable condition. After the house is put in order in the morning, vegetables should be made ready, the soup put over the fire if it is a part of the meal, and the desert arranged. If a late dinner is served, the luncheon should be punctually laid at noon, and the preparations for dinner can be leisurely made in the afternoon. Cooking for a noonday meal should commence early in the day, for hurry and good cooking can never go together.

Intoxicating Liquors.—In all recipes contained in the department of cookery, which advised the use of intoxicating liquors, we have substituted fruit juices—often using orange or lemon juice. Nothing can excel the unfermented juices of fruits as a flavoring, or for giving a desirable piquancy to various dishes. They make an almost perfect substitute for liquors, and for obvious reasons are much safer for family use. Fruit juice can be easily substituted for liquor in any recipe by those who desire to do so. In fruit cake, $\frac{1}{2}$ cup or 10 tablespoons of molasses is equal to 1 wine glass of brandy or other liquor. Those so disposed can substitute molasses for liquor in this way in any such recipe found in books, magazines or newspapers; a cake thus made will be quite as good as though the liquor was used. As the alcohol evaporates in baking, however, liquors are not so objectionable in cakes as in sauces.

SUGGESTIONS ABOUT FOOD AND FEEDING.

The rapid increase of human knowledge within the last few decades, which we all view with more or less wonder, is affecting every department of human activity. The art of housekeeping is feeling its influence, and it is becoming clear that the time has come for a science of housekeeping. Many thoughtful minds are studying the subject, but no one can work at it long without seeing that household science lays all other sciences under tribute. Surely the running of a household is a no less important task than running a steam engine or steamboat, and it requires as much technical knowledge and skill. In an address made a few years ago by the President of the American Institute of Mining Engineers before that body, he said: "If technical instruction and skill in our workmen be essential to the economical development of industry, and the welfare of those engaged in it, the technical education of their wives is not one whit less important Scientific housekeeping is neither beneath the attention of the refined, nor beyond the reach of the uncultured. It is the duty of the rich; it is the salvation of the poor." Evidently this is perfectly true.

Now no one can *thoroughly* master the art of cookery without knowing something of the chemical composition of the various foods, and the uses they serve in the system. This knowledge is especially important to the poor, for they must necessarily practice the most rigid economy, and they should know what foods are best adapted to supply the real needs of their families, and how they can obtain the most and best nourishment for the least money; and yet they are the ones who know the least about the subject, as a rule. Carefully kept statistics

show that in families consisting of a man and his wife and 3 or 4 children, where the income is small or moderate, nearly 60% of the whole amount is spent for food. Of course in families enjoying a larger income the proportion is less, but this shows the importance of the question, especially when it is remembered that those having moderate incomes constitute the great majority of the people. Let us glance, therefore, (briefly necessarily for want of space) at some of the principles which underlie the subject of food and feeding, leaving other branches of housekeeping for later treatment. And first let us take the assimilation and digestion of food.

THE PROCESSES OF DIGESTION.

An old and very good illustration likens the human body to a steam engine, and the food and water it uses, to the fuel and water fed to the engine. This analogy, carried out, will show why any person who works hard, either with the mind or body, requires more food than one who does but little, a fact which is well known. On the other hand, when idle persons eat large quantities of nitrogenous food, they become victims of inflammatory disease, or their health otherwise suffers, according, probably, to whether they assimilate it or not. And what are the processes by which these wonderful bodies of ours assimilate the food which is given to them? Let us see. From the time the food enters the mouth, it may be considered as passing along one continuous tube or canal (which is some 35 feet long and of varying size), and as it passes along, part is taken up and assimilated, and part is finally rejected as useless to the body. This journey through the body may be divided into 5 stages, in which the food is submitted to the alternate action of certain *alkaline* and *acid* fluids which cut it up and fit it for assimilation by the system.

First.—When food is taken into the mouth, it is masticated, that is, it is crushed and torn by the teeth so that it will readily fall to pieces and can then be easily acted on by the digestive juices. While in the mouth the food is thoroughly mixed (or should be) with a fluid secreted by the salivary glands, and known as saliva. This saliva is a glairy, adhesive and *alkaline* fluid, which produces the first chemical change in the food; the saliva possesses the power of acting very rapidly on starch, and it turns part of it into sugar, which is the first step towards its digestion.

Second.—The food now passes into the stomach, where it is subjected to the action of the gastric juice. This is secreted in considerable quantities by the inner lining of the stomach, and it is a clear, transparent and *acid* fluid, containing a peculiar and important principle, called pepsin. This acid gastric juice neutralizes the alkaline saliva and checks its further action* (although as it penetrates the mass of food somewhat slowly, the action of the saliva is not checked immediately on entering the stomach) and it is strong enough to dissolve the fibrin and albumen of the food. Acted upon by this fluid, and by certain wave-like muscular movements of the stomach, the food in time becomes thoroughly dissolved, with the exception of the fatty and oily matter, which is not thus far affected. The stomach acts solely on albumenoids, and not upon starch, sugar or fat. Small quantities of mild acids, like vinegar and lemon juice, add to the solvent power of the gastric juice and are therefore beneficial with meats and vegetables not easily digested. It will be evident, that to be easily acted on by the juices of the stomach, the food should readily separate into minute particles, and it should not be enveloped in fat, as is the case with pastry. Unlike the lobster tribe, the human stomach does not contain teeth and so cannot grind and tear the food in pieces, hence, if it is not thoroughly masticated by the teeth, before reaching the stomach, digestion will be slow and difficult, and a fit of indigestion will be very apt to follow. From the stomach the food passes into the small intestine, or *duodenum*, and it is then called *chyme*.

Third.—While the food is in the duodenum, or small intestine, it is subjected to the action of the bile. This is a greenish colored, viscid fluid, of a bitter taste

*One of the fundamental principles of chemistry which every one should know, is that an alkali will neutralize an acid, or an acid an alkali. The two being antagonistic, (if we can use that term) one will neutralize the other at any time.

and an unpleasant smell. It is slightly alkaline, but consists principally of two peculiar resinous acids (cholic and choleic) in combination with soda. The precise action of the bile on the chyme or food is not very clear, but it neutralizes the acids of the gastric juice and makes it alkaline, so that the pancreatic juices can act on it, and it probably assists in converting it into *chyle*, as it is then called, and in rendering it capable of absorption by the lacteals. This chyle is a milky fluid, which supplies the matter from which the blood is formed.

Fourth.—While in the duodenum, and being acted on by the bile, the chyme is also subjected to the action of the pancreatic juice, which is secreted by the pancreas. This pancreas is sometimes sold as sweetbreads, and many are familiar with it under that name. This pancreatic juice is alkaline, much like saliva, from 5 to 7 oz. of it being secreted daily, but it has the power of acting on the fats and oils and converting them into an *emulsion*, and thereby fits them for absorption into the system. Oil and water will not mix, but when cut into fine particles by an alkali, like soda or potash, oil will mingle with water. Now this is what the alkaline pancreatic juice does for the fats and oils—it cuts them into fine particles so that they mingle readily with the watery fluid, and are afterwards readily absorbed by the *villi*, but it produces little other change in them. Also the process of converting starch into sugar goes on here once more. It is in the duodenum that the fats and oils are really digested. The reader will notice that the alkaline juices, like the saliva, etc., act mainly on the fats and carbohydrates of the food, while the acid juices of the stomach act mainly on the albumenoids. (Those who wonder what “albumenoids” and “carbohydrates” are, will find an explanation later on.)

Fifth.—The food now passes along the intestinal canal, pushed along by many muscles, and it is acted on by the intestinal fluids, which are the last in the process, and which appear to be somewhat akin to saliva.

Next, this fluid (*chyle*) as it passes along, is absorbed into the lacteal system by small projecting filaments (*villi*) and it is then conveyed to the mesenteric glands, as they are called, and these glands change a part of it to corpuscles, and it is carried along in small tubes to an elongated pouch with a formidable looking name (the *receptaculum chyli*) which lies in front of the spine. From this pouch the fluid is conveyed up a tube, called the thoracic duct, to the left side of the neck, where a little valve opens and it flows into and mixes with the impure blood returning through the veins; these carry it to the heart, which pumps it into the lungs, where it is subjected to the action of the air, the oxygen in which consumes its impurities. It is now fresh, pure blood, and the arteries distribute it through the body to perform its work in the system. Every 3 to 5 minutes the blood courses over the system, according to the state of the health or the amount of exercise taken. As the blood thus comes to it, every part of the body has the singular power of taking to itself the elements it needs for growth or repair. The liver takes the elements needed for bile; the glands of the mouth those needed for saliva; the glands of the eye those needed for tears; the cartilages take their needed sulphur, soda, etc.; the bones take their phosphate of lime, calcium, magnesia, etc.; the muscles take their albumen, fibrin, phosphates, etc.; the nerves and brain, most wonderful of all, get their phosphorus, water, fats and albumen, forming that wonderful brain substance by which we feel, smell, taste, hear, see and think, and become conscious of life, and the stupendous universe about us, with its tremendous and absorbing problems.

From the foregoing it will be clear that the blood is what the food makes it, and as the supply of food is increased or decreased, or its quality altered, so the blood is affected, and the health maintained or impaired; hence the importance of adopting such rules of diet and regimen as will ensure a due supply of healthy blood to the system. So much for the process by which the body assimilates its food. If this process is once clearly understood, it will make plain many facts in regard to foods and their uses. Now let us inquire a little into the composition of the body, which grinds up, dissolves and assimilates its food in this remarkable way.

COMPOSITION OF THE BODY.

The principal chemical substances found in the body are oxygen, hydrogen, carbon, nitrogen, sulphur, phosphorus and chlorine, and the metals, iron,

sodium, potassium, lime and magnesia. The body derives its nourishment from compounds of the elements, not directly from the elements themselves; thus, although nitrogen composes $\frac{1}{5}$ of the air, it only nourishes the body when it comes as a compound resulting from some form of life. The 4 most important elements are oxygen, hydrogen, carbon and nitrogen. A human body weighing 154 lbs. is found to contain, oxygen 111 lbs.; hydrogen 14 lbs.; carbon 21 lbs.; nitrogen 3 lbs. 10 oz. In a body of the same weight we find that the compounds in which these elements exist, and their weights in the body are:

	lbs.	oz.
Water, containing oxygen and hydrogen	116	0
Gelatine, containing the 4 elements	16	0
Albumen, " " "	4	3
Fibrin, " " "	4	4
Fat, containing carbon and hydrogen	12	0

Of course these figures are only approximate. The various other elements also always appear in different combinations, as calcium in the bones and teeth; sulphur in the tissues and secretions; phosphorus in the bones and brain, and so on. These necessary compounds of the human body represent albumenoids or flesh-formers, carbohydrates or heat-givers, and salts or mineral matters. These elements are received into the human system in the form of food, and become distributed to the different parts of the body by the process of digestion and assimilation. If any of these elements are wanting, the system suffers and they must be restored to the individual. For example, rickets in children is caused by the bones containing too little lime, and, hence, the best remedy in its early stage is plenty of lime water, or some other substance containing lime. Now we find that the ultimate elements of the food we take are precisely similar to the ultimate elements of the human body, therefore let us next examine the composition of the different foods so that we may know how to supply the various elements needed by the system.

THE COMPOSITION OF FOODS.

Air, food and water are the essential chemical compounds, without which no living creature can exist. Nature has lavishly enveloped us with the first of these elements, and water, the next great want, is given without stint to those who choose to dwell where it is abundant; but to obtain food has given man the most concern, and civilized man has encompassed the globe to minister to his needs in this line. According to government rations for soldiers, about $2\frac{1}{4}$ pounds of dry food daily is required for each man, $\frac{1}{4}$ part being meat.

Liebig divides food into 2 classes:—First, the nitrogenous elements of nutrition, *i. e.*, the flesh-formers. In this class are placed albumen, vegetable and meat fibres, etc. In the second class are the non-nitrogenous elements, or heat producing foods, as fat, starch and sugar. A mixed diet has been found to be the most conducive to health, and the best drink is water. This fluid forms over $\frac{2}{3}$ of the weight of the body. The function of food may therefore be described as twofold: First, to produce and maintain the structures necessary to all life; and second, to generate heat.

A distinguished physiologist has said, "the whole animal body is modified protoplasm;" and this protoplasm (the original cells of nutrition) combined with air and water, is found in the food we take into the system. The food necessary for the perfect development of the various tissues of the body—bone, cartilage, muscle, brain, with its system of nerves, and blood—the all-pervading and all-sustaining mother-tissue—must consist of a judicious combination of the 3 great nutritive elements, viz., the *Albumenoids*, or *Proteids* as they are frequently called, the *Carbohydrates* and the *Fats*, and a certain amount of *Salts* are also needed. But some reader will say, what is meant by "albumenoids" and "carbohydrates" and what are they? Let us examine the various food elements a little.

If you will recall our previous illustration, where the human body was likened to a steam engine, it will be evident that 2 things will be needed: First, certain parts which do not burn, like the boiler and metal work of the engine; and second, the introduction of certain substances which *do* burn, like the fuel fed to the engine. Now nitrogen possesses the peculiar power, when combined with

the other elements, of interfering with their power to unite with oxygen, that is, it prevents their burning, for what we term burning is simply a rapid combination of oxygen with other elements (oxydation it is called); thus, in burning coal, for instance, the oxygen of the air rapidly unites with the carbon of the coal, and heat is given off—that is what takes place as it burns. Now, when hydrogen and carbon are united with nitrogen, as is the case with the tissues of the body, (nitrogen forms 16 % of animal tissues) the nitrogen prevents the tissues themselves from burning readily, although oxydizing (burning) processes take place in them. Let this principal be clearly understood, for it forms the basis of all that is known about a suitable dietary for the system; for a perfect diet should consist of enough nitrogenous material to produce and maintain the tissues, as we have said before, and hydrocarbons enough to generate heat for working the body. Although the primary use of nitrogenous food is to produce and maintain the tissues, secondarily it also facilitates the absorption of the carbohydrates; and although the carbohydrates produce force, they also, in some measure, contribute to the formation of tissue. The first of the great food elements of which we spoke were the *albumenoids*, so let us see what they are.

Albumenoids (they are often also called **Proteids**) is a name applied to all the foods which serve the same purpose as albumen. Albumen (from *albus*, meaning white) is a complex substance, chemically considered. It contains hydrogen, carbon, some oxygen, a little sulphur, and its essential characteristic of nitrogen. The albumenoids, therefore, all contain nitrogen, while neither fats, starches nor sugars do, and for this reason they are often called *nitrogenous*, and sometimes they are spoken of as the *flesh-formers*. As we explained in describing the process of digestion, the albumenoids are principally digested in the stomach, and after passing into the blood, they are conveyed to the tissues which they nourish, (albumen being changed to fibrin, and fibrin to flesh) and we have just explained the importance of the fact that they do not readily oxydize. The surplus and waste albumenoids are oxydized (burned) in the liver, and there they give the acids of the bile, and the solids of the urine, and their imperfect oxydation produces biliousness. And now let us see about the foods from which we derive the albumenoids. The white of an egg is almost pure albumen, and is the most familiar instance of it; but nothing can live and grow without nitrogen, and so our supplies of *albumenoids* come as lean meat, fish, gluten in flour, milk curd or cheese, gelatine, fibrin in oats, in beans, peas and lentils, and in eggs, while in the yolk of the egg it is called *vitellin*. *Albumen* is found in many foods besides egg; the blood of many animals contains it, most vegetable juices and many seeds and nuts. *Fibrin* (an albumenoid) is both animal and vegetable, and is found in the muscles of animals, and in wheat and other grains. *Casein* is an albumenoid that is found in the curd of milk, and in the pulses, *i. e.*, beans, peas and lentils. Vegetable casein is sometimes called *legumen*, but was given that name before it was known to be practically the same as animal casein of milk. *Gelatine* and some substances nearly like it, are known as *gelatinoids*, and they can replace albumen in part, though not altogether. *Ossein* is the part of bones to which they owe their strength and elasticity. When boiled under enough pressure to prevent the escape of steam, it changes to gelatine, but in cold water it is insoluble.

It is easy to see that the albumenoids are more costly than the starches, and even than the fats, and that therefore these are the foods that the poorest people suffer from the want of. On the other hand these are the foods that taste well, and of these many well-to-do people eat too much. They are sometimes called flesh-formers because their chief use is to provide material to build up the body (in the growth from childhood to maturity) and in adult life to replace material lost in work. It does not, however, follow that the more flesh-formers they eat, the larger the children will grow, or that the more a person swallows after middle life is passed, the more he will economize his failing strength. To overload a child with food is a sure way to make him small and feeble, and after middle life, if people get heavier, it is because they accumulate stores of fat, which is certainly no advantage. Although the system can convert one albumenoid into another, it cannot form an albumenoid out of fat or starch; hence, no other food element can, for any length of time, be substituted for the albumenoids without injury to the system.

Putrefaction was supposed, until a few years ago, to be caused by the action of oxygen, but it has now been demonstrated that it is caused by minute germs, called bacteria. When the bacteria attack dead matter, which contains nitrogen, the result is putrefaction. *Fermentation* is the result when they attack matter which does not contain nitrogen. Meat, fruit and food are preserved from the action of these bacteria by drying, by canning, and by using antiseptics. Drying protects against them because they cannot live without water, and their spores will not germinate without moisture. Canning offers protection by heating the article canned until the bacteria are all killed, and then sealing up the can so that no more can enter; and antiseptics act by poisoning or destroying these low forms of life.

Carbohydrates.—In the human body, as in the steam engine, the *fuel* consists of carbon and hydrogen, which readily unite with oxygen—that is, they *burn*, and so supply heat and power to run the machine or organism. This fire burns constantly in the body, but “instead of taking place in one spot and so rapidly as to be accompanied by light, as in the fire in the grate, it takes place in each drop of blood, and so slowly and continuously as not to be noticed.” From the 2 elements of carbon and hydrogen, *starch*, *sugar* and *fat* are built up. In using the fuel—food, the system turns the starch to sugar, and the sugar to fat. It is in the form of fat that the surplus carbohydrates are stored up, and it is then drawn on in times of need. The average amount of fat so stored up suffices for about 10 days’ fuel, but the hibernating bear lives through the winter on his stored up fat. Fats we speak of later, but by the carbohydrates are generally meant starch, and the different sugars (sugar of milk and the vegetable sugars), although cellulose, pectose, gum, etc., are closely allied to the carbohydrates, and would be classed with them. The starches and sugars come mainly from the vegetable world. The average working man requires 17 to 18 ounces of carbohydrates daily in his food, a much larger quantity of these carbohydrates than of fats being needed to furnish a given amount of force to the body.

Sugar is so easily dissolved and diffused that it requires no preliminary digestive process to prepare it for assimilation; it passes without change into the circulation. If, however, it is supplied in excess of the needs of the system, on reaching the stomach it undergoes lactic acid fermentation, and thus occasions the acidity from which some dyspeptics suffer. When not in excess, the sugar is carried on to the liver, where it undergoes certain changes which lead us to think that it contributes to the production of fat, rather than force. There are 3 kinds of sugar—*sucrose*, or cane sugar; *glucose*, or grape sugar; *lactose*, or milk sugar, and they are all composed of carbon, hydrogen and oxygen. Where taken as food, both lactose and sucrose are converted by the gastric juice, etc., into glucose, in which form they are absorbed into the circulation. Glucose undergoes no change. Sugar fuses at 320°, and at 420° F. it turns into a brown substance, called *caramel*. Sugar will decompose by fermentation and break up into simpler compounds.

Saccharine.—This sweetening agent which is being substituted in place of sugar in some instances, was discovered about 1879 by Constantine Fahlberg, then a student in Johns Hopkins University at Baltimore. It is derived from coal-tar, and possesses 500 times the sweetening power of sugar. It is not a carbohydrate, like sugar, and it possesses no nutritive value, as it passes through the system unchanged. It is an acid, will not ferment, and has some antiseptic properties, retarding decomposition and fermentation. It is slightly soluble in cold water, more so in warm, and quite soluble in boiling water. Its use is not at all injurious. As it has no nutritive value, it must be regarded more as a spice than as a food. Owing to its intense sweetness it must be much diluted for use. Because of its antiseptic properties it will be useful in preserving fruits and fruit juices. It is also very useful in diseases like diabetes, glycosuria, obesity, etc., where sugar is injurious, and also in babies’ food. It is one of the new additions made by modern science to the resources of the housewife, as well as the physician and manufacturer, and its use will doubtless rapidly increase in the near future. It should never be put into cold water and then boiled to dissolve it, as that causes its partial decomposition; add it to hot fluids only after they are removed from the fire. It should never come into direct contact with metallic vessels.

Starch.—Before starch can be taken into the blood, the digestive juices must turn it into sugar, and we explained how that is done in describing the process of digestion. Raw starch would pass out of the system unassimilated. When boiled, the granules are burst and are then readily converted into sugar. If not acted on by the saliva, it passes on to the duodenum, or small intestine, where its digestion really takes place. If the stomach is over-loaded with starch at any time, the digestion will be influenced by certain fermentations which result. It seems to be the opinion of the best authorities at present that the fermentation of starchy foods, for which their stomachs are not prepared, is the cause of the

severe and troublesome diarrhoeas of small children. To show the value of cooking and the differences in starches, it may be said, that experiment has shown that uncooked starch from Indian corn may be completely turned into sugar by the action of the saliva in 3 minutes, oat starch in 6 minutes, wheat starch in 40 minutes, and potato starch in 3 hours, but after thorough cooking, all starches require nearly the same time, so that cooking greatly aids its digestion. Under the microscope, starch is seen to consist of little rounded granules, varying in form according to the plant from which they are derived. The granules are covered with a skin which is insoluble in cold water, but which bursts in boiling water, letting out the starch which is inside.

Bread, potatoes, rice, barley and all the floury foods contain more starch than anything else, and corn-flour, sago, tapioca and arrowroot are nearly pure starches. There is much starch also in beans, peas and lentils, though they are often spoken of as flesh-forming foods, because of the large amount of casein which they contain. There is no starch in milk, but sugar which takes its place. It will be seen that the starchy foods are the cheapest and most abundant of all, so that whenever people have enough of any food, they are pretty sure to have enough of these. The poor people get these most readily, but the richer classes and brain-workers take more albumenoids and fats, and less of the carbohydrates, at least in their starchy form. Starch is composed of oxygen, hydrogen and carbon, and when heated to 401° F. it becomes *dextrin*, which is more easily digested than starch, although its chemical composition is the same. This dextrin is used in preparing many of the "infant foods," and it is sometimes called "British gum," or "starch gum."

The *Cellulose* or cell structure of plants is closely allied to the carbohydrates, it being composed of oxygen, hydrogen and carbon. It must first be changed into sugar before it can be absorbed into the system. Cellulose appears in the membrane which surrounds the grains, in the rinds of fruits, in the skins of seeds, in the woody fibre of grain stalks, etc., while cotton, linen and linen paper are mainly composed of it. When submitted to the action of strong sulphuric acid it may be turned to sugar; but while the chemist in his laboratory can change cellulose into sugar, the human stomach does not readily act on it. In young and tender plants, like lettuce, celery, cabbage, etc., the stomach digests from 50% to 60% of the cellulose, but in older plants it often becomes almost indigestible. Even the ox with his many stomachs only gets out of grass and hay about 60% of its albumenoids, and with man, vegetable foods, as generally prepared, yield from 25% to 50% less of their nutrients than do animal foods. A working man will digest 97% of the meat he eats, while only 60% of the nutrients of a dish of beans are assimilated, because the beans are encased in a tough skin of cellulose; and this shows the need of thorough cooking, and the separation of the cellulose as far as possible from the other ingredients. Cellulose should, on the whole, be regarded as a foreign substance to be gotten out of the way, rather than as a food.

Pectose is composed of carbon, hydrogen and oxygen, and is found in many fruits, like currants, plums and peaches, and in some vegetables, like turnips, beets, etc. It turns to a vegetable jelly known as *pectine* when boiled in water, and this it is which makes the preserves firm which are made from plums, pears, currants, peaches, etc.

Gum, which in its composition is nearly allied to cane sugar, is found dissolved in the juices of many fruits and stems, like apple, plum, etc., and is usually accompanied with a little lime and potash. Gum arabic and senegal are 2 examples. *Mucilage* appears in the onion, quince-seeds, linseed, etc., but does not dissolve to a thin liquid like gum arabic, although it probably undergoes solution and absorption in the body. It is classed with the carbohydrates.

Fats.—The fats usually employed as food are the vegetable oils, like olive oil—and latterly in this country cotton-seed oil—and the animal fats, as butter, suet, lard, etc., etc. Fat is composed of carbon, hydrogen and oxygen. It is an essential article of food, and many people suffer in health for the want of it, especially among the poor who cannot afford the dearer fats, or do not understand the cheaper, and among the sickly, who cannot—or fancy they cannot—digest fat in any form. If it is only digested, one fat is as good for food as another. Cod liver oil and cream are the easiest to digest. Fats that are greatly heated decompose, and then are always difficult of digestion, which is the reason why

fried food often disagrees. Many persons who cannot eat a lump of fat with meat, hot or cold, can eat buttered toast, or suet pudding, or take fat in some of the many forms in which the cook can serve it. Fat and starch can replace one another to some extent, but there must be some fat, and it is better in this climate to have some starchy or floury food. In the coldest countries plants do not grow, and so starch is there unknown, fat taking its place.

The nutritive value of fats and oils is the same, and they may be considered as formed by the union of a fatty acid and glycerine; thus, if 3 parts of some fatty acid, like palmitic, be heated with 1 part of glycerine in a closed tube, palm oil and water are produced. *Wax*, though probably of similar value as a nutrient, differs from oils and fats somewhat, notably in not yielding glycerine. The proper digestion of fat is a matter of great importance, for it is essential to healthy tissue formation, as well as being a fuel-food, and it is essential to tissue repair as well as tissue growth. Many maladies may be averted if the system can be made to digest fat properly. Fat and sugar do not furnish bile acids, and hence the bilious are comparatively well with them, but they may lead indirectly to biliousness. If more food is eaten than the body needs, the hydrocarbons, which are readily oxydized, will be burnt (oxydized) first, and the surplus, or nitrogenous elements, will be imperfectly oxydized, which is the reason that a rich meal causes biliousness in persons subject to such attacks.

Fat swallowed in lumps is almost indigestible, and hence it should be taken into the system in a finely divided state. Children who will not eat fat meat will often take the same amount of fat, as butter, spread on bread. More force is produced by the burning or oxydation of fat in the body, than by any other food material, as it possesses $2\frac{1}{2}$ times the power of starch for maintaining heat and activity. The average working man requires 2 oz. of fat daily.

Carbonates and Salts.—These include common salt (chloride of sodium), potash, phosphates of lime and iron. Common salt is a necessary food, and the only mineral habitually added to food as such. Potash is found in all fresh fruits and vegetables; probably no defect is more common than the want of these, especially in our large towns. Lime is necessary for the building up of the bones and teeth. It is found in whole grains, and the young get it in their milk; when we see weak and distorted limbs and broken teeth, we know that it has been missing. Iron occurs in nearly all articles used for food, though in minute quantities. Distinct traces are found in the ashes of all plants used for food. These salts are essential to health and without them many diseases would fasten on the body, like the scurvy which was such a terror to sailors, and which vegetables cure like magic. The bones of an adult man contain at least 70 % of mineral matter, mostly phosphate of lime, while the muscles, blood and tissue contain salts of potash and soda, and some iron.

Salt.—Common salt is the most widely distributed substance in the body; it exists in every fluid and in every solid; and not only is it everywhere present, but in almost every part it constitutes the largest portion of the ash when any tissue is burnt. In particular it is a constant constituent of the blood, and it maintains in it a proportion which is almost wholly independent of the amount which is consumed with the food. The blood will take up so much and no more, however much we may take with our food; and on the other hand, if none be given, the blood parts with its natural quantity slowly and unwillingly. From salt also comes the hydrochloric acid for the bile, and the soda for the bile salt in the liver. It is of immense importance in the processes ministering to the nutrition of the body, for not only is it the chief salt in the gastric juice, and essential for the formation of bile, but it is an important agent in promoting the process of diffusion, and therefore of absorption. Direct experiment has shown that it promotes the decomposition of albumen in the body. Nothing can demonstrate its value better than the fact that if albumen without salt is introduced into the intestine of an animal, no portion of it is absorbed, while it all quickly disappears if salt be added. The conclusion, therefore, is obvious, that salt, being wholesome, and indeed necessary, should be taken in moderate quantities, and that abstention from it is likely to be injurious.

Acids are found in fruits and most vegetable products. They appear partly in the free state and partly in the form of salts. *Citric*, *Malic*, *Tartaric* and *Oxalic* are the 4 principal acids found in vegetable products. *Acetic* acid is mainly

produced by the fermentation of alcohol or sugar, but also occurs in some fruits, especially when they are over-ripe or decaying. In the process of digestion the acids all act much alike, exerting a solvent action on some foods, but their nutritive power is small. Too little is consumed to give out much heat or force, and besides they are already highly oxydized, and easily turn into the final products of oxydation—carbonic acid and water. Citric acid is the most wholesome, tartaric and malic less so, and oxalic the least so of any acid.

Water undergoes no chemical change in the system and produces no force; yet it is indispensable as a component part of food, for it facilitates the chemical changes which take place.

Potential Energy of Food.—As we elsewhere explain, one office of food is to furnish the body with heat and muscular power. Although the carbohydrates and fats serve principally to furnish these, the albumenoids can also be used by the body for this purpose; for while the carbohydrates and fats cannot take the place of the albumenoids, the latter can, to a certain extent, supply the place of the former. Scientists by experimenting with an apparatus called a *calorimeter* determine the amount of heat (or muscular energy) which any given food can furnish to the body, and this they call its "potential energy." To express the amount of these heat (or force) producing elements, they adopt a standard which they call a "Calorie." A Calorie is an amount of heat which will raise 1 lb. of water 4° F., or stated in terms of mechanical energy, it will lift 1.53 tons 1 foot. Now to tell the average woman that 1 lb. of potatoes, for example, contains 375 Calories, means to her almost nothing at all, but to tell her that 1 lb. of potatoes contains 375 Calories, while 1 lb. of wheat flour contains 1645 Calories, ought to mean a great deal, for it means that 1 lb. of flour contains nearly 5 times as much force producing power (*i. e.*, potential energy) as there is in 1 lb. of potatoes. So also 1 lb. of neck of beef, worth perhaps 8 cents, contains 1100 Calories (20 cents' worth would contain 2750 Calories), while 1 lb. of sirloin, worth, say, 20 cents, only contains 1210 Calories, so that clearly the neck is very much the most economical piece to buy, as it will supply the body with more than twice as much power for the same money. By studying the tables given elsewhere, in this comparative way, not only regarding the potential energy, but the relative amounts of albumenoids and other elements as well, much information ought to be obtained of practical value to housekeepers.

THE AMOUNT AND CHARACTER OF FOOD NEEDED.

The amount and character of the food required varies with different individuals, depending on age, sex, climate, season of the year, physical and mental exertion, etc. Under a meat diet there is a more copious secretion of gastric juice, while under a vegetable diet the saliva is more abundant, showing that there is a provision in the system for variation in the food. A certain amount of meat undoubtedly increases the bodily vigor, although it is not absolutely necessary for health. Of the entire weight of the body, in the plant-eating animals the digestive organs form 15 to 20%; in the flesh eating animals they form 5 to 6%; in man they form 7 to 8%. It will be seen that man approaches much nearer to the flesh-eating than to the plant-eating animals, and yet, by the aid of proper *cooking* (which is a great help) man can digest many of the vegetables much more quickly and completely than can be done by a plant-eating animal like the cow. But to get the amount of albumenoids essential to health on, say, an exclusive potato diet, a man would need at least 10 lbs. a day, and Dr. Edward Smith found some poor Irish laborers who actually eat that much. Such a diet, however, would distend the digestive organs unnaturally, and make one dull and stupid. A mixed diet is undoubtedly best.

In early life all vital processes are most rapid, and provision must also be made for the growth of all parts of the body, while in old age the vital processes become least active; they are more active in the spring, in cold climates, and in highlands, and less so at the end of summer, in hot climates, and in valleys, and exercise always stimulates these processes. Man requires more nitrogenous food than woman.

Looking at the different nations of the world, we find they have almost in-

stinctively chosen the foods most suited to their needs. The Esquimaux, eating his raw blubber and other fatty and oily foods, obtains his carbonaceous food in its most concentrated form, furnishing the body with the fuel needed to give warmth to withstand the intense cold. In Sweden, Norway and other northern countries, they tend towards the Esquimaux's oily diet. In India and China, on the other hand, where rice is universally eaten, there is very little need for the concentrated heat producers, the starch and sugar of rice, with a little olive oil or melted butter, answering their needs well. In Italy the general use of macaroni furnishes them with the nutritive elements of wheat in its most condensed form. And so, in the light of the principles we have explained, we might examine the characteristic diets of other nations, but it must not be inferred that the staple articles of food in the different countries are in all instances perfectly adapted to their needs, as some at least of the national dietaries might with a little knowledge be much improved.

But while the leading races have in a general way hit on the foods which are in the main suited to their conditions, our complicated modern life demands many varieties of diet. The literary man requires one thing, the mechanic another; the growing child needs food suited to its wants, and the aged grandparent a different diet, and we should know how to meet these varying wants. Our advancing knowledge of the human organism and the requirements of the system demand that our dietaries shall be more thoughtfully prepared, and adapted to our needs. If there is an excess of one element, and a lack of another, that excess or lack means disorder in the system, and in time disease, for which our ignorance is wholly responsible. Moreover, an intelligent selection of foods will often avert the effects of inherited or other disorders, and a child burdened with scrofulous or other diseases, may, by a scientific selection of the proper foods, be often saved from a life of invalidism or an early death.

It is impossible, however, to lay down exact rules for the selection of food in health and disease. Only general principles can be given, known scientific facts can be explained, well-tried common experience recorded, and from these materials the diet most suited to special cases must be selected with intelligence and judgment. While in robust health the appetite, guided by the experience of the individual, is a generally safe guide, in debility, dyspepsia, gout and all diseased conditions, the proper selection of the food is of very great importance. All physicians know that if proper dietetic rules were universally observed, robust health would be more common, recovery from disease more rapid, and the death rate much diminished. They also know that the digestibility of food, and its proper assimilation, depend as much upon the mode of its preparation as upon the condition of the person who eats it, hence the importance of understanding the principles of cookery. One physician told the writer that the trouble with nearly $\frac{1}{4}$ of all the patients who came to him for advice could be traced to indigestion, caused by improper or improperly cooked food.

While the limits of this work will not allow us to treat as fully as we would like the large and important subjects of food and dietetics, we can indicate the direction in which the best thought of the day is tending, and we hope some of our readers may be stimulated to further investigation of these subjects, for it will not be a waste of either time or labor. It will well repay earnest study in leisure hours, and it can safely be said that there is no subject which deserves more careful study by women than that of the selection and preparation of food.

Now the intelligent woman who attempts to provide food for her family must

DAILY RATIONS REQUIRED FOR DIFFERENT AGES AND SEXES.

	Carbohydrates.	Albumenoids.	Fats.	Potential Energy.
	Ounces.	Ounces.	Ounces.	Calories.
Children, 1 to 2 years	2.4	0.9	1.2	765
Children, 2 to 6 years	6.3	1.8	1.3	1420
Children, 6 to 15 years	10.2	2.4	1.4	2040
Woman at moderate work	12.5	3.0	1.8	2425
Man at moderate work	16.0	4.2	2.0	3160
An aged man	11.1	5.3	2.2	2475
An aged woman	8.3	2.6	1.6	1860

aim to supply all the different food elements in proper proportion, and to do it so that those she loves and for whom she provides may have the proper physical nourishment to sustain them in the great struggle of life. (See page 20 for the generally accepted average daily rations for persons of different ages and sexes.)

The best authorities think that $\frac{1}{3}$ of the albumenoids should come from the animal kingdom. Of course the health, temperament, climate, and amount of work being done must be taken into consideration, but these are fair averages. It will be seen that this dietary calls for about twice as much of the albumenoids as of the fats, and a little over 4 times as much of the carbohydrates as of the albumenoids. The table given below will serve to show the proportions of these elements found in the different foods.

CONSTITUENTS IN ONE POUND OF VARIOUS FOODS.

NAME OF FOOD.	Water.		Albumenoids. (Flesh Form- ers.)		Starch, Sugar, Etc. (Heat Givers.)		Fats. (Heat Giving.)		Mineral Matters.	
	oz.	grs.	oz.	grs.	oz.	grs.	oz.	grs.	oz.	grs.
Bananas.....	11	361	0	336	0	80	0	42	0	56
Beans.....	2	105	3	297	8	434	0	161	0	203
Bacon.....	3	250	1	132	0	0	10	191	0	301
Barley (Pearl).....	2	147	0	434	12	125	0	91	0	77
Beef.....	8	0	2	184	0	0	4	340	0	350
Butter.....	1	262	0	70	0	21	14	14	0	70
Cabbage.....	14	105	0	105	1	108	0	35	0	84
Cheese.....	5	214	4	294	0	140	4	322	0	341
Corn Meal.....	2	140	1	193	11	51	0	350	0	140
Eggs.....	11	207	2	105	0	0	1	332	0	231
Fowl.....	12	196	2	336	0	0	0	231	0	112
Lamb.....	8	44	1	323	0	0	5	263	0	244
Mackerel.....	10	434	2	70	0	0	2	170	0	231
Milk.....	13	333	4	1	5	1	3	7	0	8
Mutton.....	7	16	2	0	0	0	6	176	0	245
Oatmeal.....	0	350	2	253	10	291	1	270	0	147
Peas.....	2	126	3	255	9	108	0	175	0	210
Pork.....	6	69	1	263	0	0	8	0	0	105
Potatoes.....	12	0	0	161	3	185	0	21	0	70
Rice.....	2	147	1	87	12	133	0	35	0	35
Salmon.....	12	143	2	43	0	0	0	301	0	387
Veal.....	10	0	2	281	0	0	2	231	0	312
Wheat Flour.....	2	34	1	297	11	0	0	57	0	49

The following tables, which are intended to be suggestive mainly, will indicate the method of combining the different foods for a dietary for an average working man, to supply the needed amounts of the different food elements. These tables give the approximate cost of the foods alone, without including the expense of cooking, etc.

DAILY RATIONS WITHOUT MEAT [CHEAP].

No. 1.

No. 2.

	Albu- men- oids.	Carbo- hy- drates.	Fats.	Cost.
	oz.	oz.	oz.	cts.
1 lb. Bread.....	1.05	8.75	0.09	3
2 oz. Oatmeal.....	.30	1.25	.13	0½
1 pint Milk.....	.55	.56	.74	3
2 oz. Sugar.....	0	1.90	0	0¾
2 lbs. Potatoes.....	.67	6.71	0	2
2 oz. Lard.....	0	0	2.00	1¼
6 oz. Cheese.....	1.50	1.74	.13	4
3 Cups Coffee.....	0	0	0	2
	4.07	20.91	3.09	16½

	Albu- men- oids.	Carbo- hy- drates.	Fats.	Cost.
	oz.	oz.	oz.	cts.
1½ lbs. Bread.....	1.68	13.25	.12	4
4 oz. Oatmeal.....	.90	2.55	.25	1
1½ lbs. Potatoes.....	.50	5.00	0	1½
2 oz. Sugar.....	0	1.90	0	0¾
1 pint Milk.....	.55	.56	.74	3
2 oz. Lard.....	0	0	2.00	1¼
4 oz. Beans.....	.89	2.00	.60	1
3 cups Tea.....	0	0	10	1
	4.22	25.26	3.21	13½

DAILY RATIONS WITH MEAT.

No. 1.					No. 2.				
	Albumen- oids.	Carbo- hydrates.	Fats.	Cost.		Albumen- oids.	Carbo- hydrates.	Fats.	Cost.
	oz.	oz.	oz.	cts.		oz.	oz.	oz.	cts.
1½ lbs. Bread	1.68	13 25	.12	4½	1 lb. Bread	1.05	8.75	0.09	3
1½ lbs. Potatoes ..	.50	5.00	0	1½	2 oz. Oatmeal	.30	1.25	.13	0½
½ lb. Beef (fat) ...	1.40	0	1 55	8	2 lbs. Potatoes ...	.67	6.71	0	1½
1 Pint Milk	.55	.56	.74	3	¼ lb. Beef (lean) ..	.70	0	.10	5
2 oz. Sugar	0	1 90	0	0¾	2 oz. Codfish	1.70	0	.03	1¼
3 Cups Coffee	0	0	0	2	2 oz. Butter	0	0	1.70	4
	4.13	20.71	2.41	19¾	1 Pint Milk	.55	.56	.74	3
					2 oz. Sugar	0	1 90	0	0¾
					2 Eggs	.26	.23	0	4
					3 Cups Tea	0	0	0	1
						5.23	19.40	2.79	24

COOKING AND ITS OBJECT.

The principal object of cookery and the artificial preparation of food must be to assist in the wonderful series of changes known as digestion and assimilation. The art of cookery flourished for ages before the modern sciences were known, and until recently there was no such thing as a science of cookery; but the mere fact that cookery long existed without the aid of science is no reason why it should continue to do so. In the latter part of the 18th century Count Rumford made his memorable experiments on feeding the poor in Munich, and although, owing to the ignorance of chemistry and physiology which then prevailed, many of his deductions were wrong, the interest in the study of the food problem was awakened. The first experimental agricultural college in the world was established at Mockern, Saxony, in 1851, but since then many others have been established, and these and the great universities have in their laboratories made analyses of most of the foods used by men and animals, and they are now doing some most excellent work. Since 1863, when Dr. Edward Smith made his report on the amount of food needed to support a family (a report called out by the necessities of the cotton spinners in Cheshire and Lancashire, England, growing out of the American Civil War), other scientists have investigated and traced all the food taken into the bodies of certain individuals while they were at rest and while they were at work. Estimates have thus been made of the amount of food needed to sustain both men and women in various conditions in life, and much light has been shed on the subject of furnishing the proper amount of nourishment to sustain the human system in health and vigor. And how about the science of cookery? This science can make no advance without the help of chemistry and physiology, but these are comparatively new sciences, and every year they make substantial advances. Only a few scientific principles have yet been applied in cookery, but there has been a great advance in the last 20 years and the way is now open for still greater progress in the future. Scientists have been so absorbed by their work in other directions that they have given comparatively little attention to the subject of cookery, although a beginning has been made, and much work done. The day cannot be far distant, however, when all the resources of our rapidly advancing sciences will be brought to bear on this subject, and we think it probable that through the application of chemistry to the processes of cookery, changes will be wrought in the not distant future which will fully equal, in their practical benefits to the human race, any of the advances which have so dazzled and astonished those who have been privileged to live in the last few decades. And these are not the wild dreams of visionaries, but the cautiously formed opinion of those who know much of the work which has been done in our laboratories, and of the principles which underlie the various processes. Mr. Mattieu Williams, speaking of this subject, asks the question, "whether a very great refinement of scientific cookery may or may not enable us to convert nutshells, wood shavings and sawdust into wholesome and digestible food?" and he answers: "I have no doubt whatever that it

can." Other scientists see nothing unreasonable in such an opinion. In the chemists' laboratory already an old handkerchief and a piece of an old shirt have been turned into sugar. Of course this cannot be done in the average kitchen, but it shows the possibilities before us.

When we consider that a healthy man of usual size takes into his stomach every year, on an average, about 300 lbs. of meat, 500 lbs. of bread, 300 lbs. of potatoes and vegetables, 90 lbs. of butter and fats, and 150 gallons of tea, coffee and water, or other fluids, we can easily see the great importance which is to be attached to the proper cooking and preparation of this material. And none are more interested in this subject than the poor. Those who have been much among the working classes know that they suffer from various disorders arising from badly-cooked and therefore ill-digested food, for the cure of which, suitable food skilfully prepared will do more than medicine. Furthermore, their necessities compel them to make much out of little, and to perform every cooking operation with the fewest appliances, and with no time to spare; but *perfection* in the art of cookery is only attained by experience, a careful study of the qualities of foods, and some knowledge of the underlying principles involved.

We certainly think that it is very important for those who from necessity or choice are called upon to prepare the food on which the life and health of the human body must depend, to endeavor to understand at least the fundamental principles which underlie their work—not only for their own sake, but for those for whom they provide, or may be called upon to advise. In this, as in other things, "knowledge is power." While many among the poorer classes of people suffer because of the limited variety and inferior quality of their food, large classes of more prosperous people suffer quite as much from the imperfect manner in which their food is prepared for the table.

Now, if we ask what are the principal reasons for preparing and cooking food, the following would be given: (1). Cooking makes the food more attractive to the senses. Not only the appetite, but the eye and smell are gratified by the processes of baking, roasting and stewing, and thus the food becomes more longed for, and consequently more gratifying than it could possibly be in a raw state. (2). The process of cooking is attended or preceded by processes of cleaning, by which much in food that is repulsive and useless is cast aside. (3). The process of cooking facilitates and hastens the process of digestion. Boiling, stewing and roasting make flesh, fish or vegetables softer or more juicy, so that they are more easily acted on by the digestive fluids and more easily assimilated by the system. (4). Cookery destroys the parasites with which some foods are infested. (5). Because of the economy of warm food. All cold food introduced into the stomach must be warmed there before it can be digested and assimilated, and if it is warmed before being eaten, it is a distinct saving to the system.

The most important results of cookery at present are to be ascribed to the action of heat upon the various constituents of our food. Many of the foods now eaten would become useless to us if they had to be eaten raw. Cooking may not alter the chemical constitution of a food, and yet it may entirely change its practical value to mankind. Many of the changes wrought by heat are easily explained. Whether albumen is barely coagulated or is hard and horny, whether fiber is shrivelled or swelled, whether gelatine is dry and brittle or dissolved, it does not take a scientific head to discover, but science tells us *why* these things are, and so enables us to bring our food readily into whatever state we will. Given good food, and one cook so manipulates it that the eaters are well nourished and pleased; another cook leaves them hungry and discontented. Unhappily, as things go, many a badly cooked dish has cost an industrious husband a month's earnings in doctor's bills, and many a human life has been sacrificed to the ingenious preparations of our kitchens. If every intelligent cook would try and find out the *reasons* for the various operations of the kitchen, instead of working by rote in a blind sort of way, the gain to the community would be almost inestimable.

TIMES AND MANNER OF EATING.

Among the principal laws of diet which have been established by experience, and which are more or less explained and confirmed by chemical and economical science, are these: (1). The appetite, with all its liabilities to error, is, within

certain limits, and under the guide of individual experience, a valuable guide in determining the quality and quantity of our food. (2). The food of all classes should be generous, both in quantity and quality; and there should be an agreeable variety, not only from week to week and day to day, but at each principal meal. (3). The quantity, the quality and the variety of food must be modified by race, climate, season, age, sex, occupation, habit, and the progress of civilization. (4). The principal meals should be taken with tolerable regularity, and in calmness and leisure, and amid agreeable social surroundings.

The custom of having regular hours for meals is peculiar to civilization, and is only possible where food is tolerably abundant and accessible; it is most necessary among those who are most sensitive, delicate and nervous. The times for eating for the great majority of people should be morning, noon and night. Those who work hard cannot labor to advantage if the meals are more than 6 hours apart, as they begin to lose strength.

However the diet may be regulated, a few simple rules should always be borne in mind: (1). That while a low or spare diet is seldom either necessary or harmless, the stomach should never be filled to an extent sufficient to cause any sensation of uneasiness. (2). That eating should always be sufficiently slow to admit of thorough mastication of the food. (3). That solid food should not be taken with much fluid, it being better to drink freely between meals. (4). That neither mind nor body should be actively exercised very soon after a full meal. If these simple rules could be adopted, and at the same time a sufficient amount of exercise could be taken, pure air breathed, and proper habits of life adopted, the health and happiness of most people would be much improved.

THE HOUSEWIFE'S AIM.

In conclusion we may say, that the work which devolves on the housewife in providing the food for a family, may be divided into 4 heads: (1). In obtaining the necessary food elements, she should endeavor to obtain them in their cheapest form—this would come under the head of marketing. (2). Having purchased the food, she should so cook it as to best utilize its nutritive elements—this requires intelligent cooking so that the digestibility of the food may be increased instead of lessened, as is too often the case. (3). To so season and flavor the food as to make it palatable and inviting. To make food so attractive that it will be eaten with zest is an item too often overlooked by the indifferent cook.* (4). To utilize every scrap so that nothing is wasted.—To render such assistance as we can to our readers, in these various branches of their work, will be our aim in the following pages.

*The old saying that an attractive article of food causes the "mouth to water" has a basis in fact, because the sight of it will cause the salivary glands to freely discharge their juices, which is the "watering of the mouth" referred to, while a repulsive article of food does not do so; an attractive dish of food, therefore, clearly stands the best chance of being well digested.

MARKETING.

The thrifty housewife will find it advantageous to do the marketing for the household herself, instead of simply ordering through others. By so doing she will secure 2 advantages—she can (1) select the best provisions, and (2) get them at the lowest prices. Many housekeepers dread going to market, and think it is not a proper place for ladies; this is a mistake, for as many gentlemen will be found among marketmen as in any other business, and as practical knowledge of this kind possessed by the housewife directly affects the comfort of the family, and the cost of supporting it, information of this character should be obtained as far as possible by every housekeeper. As a variety of food is essential to both the health and comfort of every individual, the endeavor should be made, when purchasing, to provide a succession of different kinds of food, both animal and vegetable. It is often imagined that variety involves expense, whereas the very opposite is true, as the wider the range of a housekeeper's ideas in marketing, the greater the opportunity of purchasing to advantage. As there is sometimes a run on the market for special articles, which advances their prices, while other articles may be proportionately cheap, it is often best not to decide beforehand just what will be bought. A good deal of care is required in marketing, especially for a large family with a limited income, and we hope the hints we offer on these subjects will prove serviceable to our readers. One thing, which many people need to be particularly reminded of, is that to pay cash down is the only way to insure the best value, either in the goods purchased or in comfort gained.

Poor people especially suffer from ignorance about the nutritive value of different foods. They seem to think that there is some peculiar virtue in the choicest cuts of meat, the best flour, the most delicate vegetables and the highest priced butter, but it is an erroneous idea. Experienced marketmen say that the rich will buy the coarser cuts of meat, but the poor refuse them, and that the money of the poor is the most wastefully expended. The amount of money wasted in injudicious marketing by people of small means is surprising. They quite generally depend on buying high priced foods, rather than on intelligent cooking and serving to make their tables attractive. It is certain that the poor display the worst economy in purchasing as well as in the cooking of their food. Now people should know (poor people especially) that the lower priced and tougher parts of meat contain fully as much nutriment as the high priced cuts. In buying large classes of food (not all) it is emphatically not true that the highest priced is the cheapest. The rich will always buy the choicest articles, but it is delicate flavor, not nutriment, which they pay for. In buying codfish, beans or flour, 10 cents will get as much nutriment for our bodies as 50 or 75 cents will obtain in tenderloin, salmon or lobster. A little study and skill in preparing them is all that is needed to utilize the lower priced foods and make them attractive. Tough meat can be made tender in various ways which we explain elsewhere. Buy meat ahead in winter, and keep it until it grows tender. Half a calf's head will make a splendid soup. Buy the fat middle rib frequently, and then stew it long and well. Make soups of trimmings and tough pieces, and the next day chop up the tasteless meat and make it palatable with flavors and sauces. Make stews and ragouts of fairly good pieces, and broil or bake the parts which are tender and juicy. When fish is cheap, buy it. Catfish, for example, are excellent when fried.

Considering their nutritive value, eggs, even when cheapest, are not as cheap as the lowest priced cuts of meat from fat animals, but they are valuable in furnishing variety, and they can be used in making various egg dishes. Eggs at 15 cts. a doz. are about equivalent to meat at 12½ cts. a lb.; at 30 cts. a doz. they correspond to meat at 25 cts. a lb. It will be seen that more nourishment can be obtained with a given amount of money by buying the cheaper parts of meat, like brisket, neck and flank. Cheese ought to be more highly valued than it is, and can be bought profitably once a week. (See what we say about it elsewhere.)

It is surprising how much can be saved to a family by a little intelligence in buying, and some knowledge of scientific cookery. A diet which is both nourishing and palatable can be supplied at a comparatively small cost in that way.

Great care should also be taken that food is not only well bought, but that nothing is thrown away, or suffered to be wasted in the kitchen. The shank bones of mutton, so little esteemed in general, give richness to soups or gravies, if well soaked and crushed before they are added to the boiling, being particularly nourishing for sick persons. Roast beef bones, or shank bones of ham, make excellent stock for pea soup. The dripping from a half spoiled joint is useless for food, and the bone will certainly spoil soup. Save all scraps of meat and bones left from roasts and broils, and utilize them in the soup pot. Also save the trimmings from corned beef, tongue, ham, etc., as they will make many relishes. Have the trimmings sent home with the meat when buying it, as they may be used in soups and sauces.

BUYING MEATS.

In addition to the special directions given below, it may be useful to observe that moderately fat meat is the best in every respect. If it is very lean, the animal has been underfed, and the meat will probably be tough and tasteless; if there is an excess of fat, it renders the joint costly when purchased at current rates. Very lean meat is dear at any price. A golden rule to act on is that the inferior joints of the best meat are better than the best joints of inferior meat. Lean meat is nitrogenous, or flesh-forming, and is preferable for use in hot weather, or for people living in a warm climate; but in cold countries where heating food is required, fat meats are more necessary.

Although the flesh of young is tenderer than that of adult animals, it is more difficult to digest. Dr. Smith has shown that this is mainly because the flesh of young animals cannot be perfectly masticated; hence veal and lamb are more difficult to digest than beef or mutton, and are worse for dyspeptics. The tissues are more gelatinous, and less nourishing and stimulating in young than in adult animals; but if very old, the flesh may be so tough as to nearly defy both mastication and digestion.

Good raw meat is neither very pale nor very dark; it is a rich red, and has a marbled look, given by the small veins of fat running through it. To the touch, it is firm and elastic, and should scarcely wet the finger. When taken from a dish upon which it has been standing, little or no moisture should remain behind. Bad or inferior meat is either lacking in color, or is of a dark purplish tint. It is wet or sodden to the touch, and, if left standing, will leave a pool of blood and water behind. Without having an actually tainted smell, it has often a very sickly one; the inside fat surrounding the kidneys and liver is often suffused with blood. Meat which is over fresh, or too recently killed, will manifest itself by the smell quite as readily as tainted meat—it will suggest excessive bloodiness.

Do not buy butcher's meat, or poultry, that shows any signs of cruel treatment before being slain; meat with bruises, discolored spots, and extravasated clots of blood should be avoided, as the flesh of suffering animals undergoes a change which is unwholesome.

PUTRID MEAT.—The albuminous substances in meat when they putrefy generate certain organic poisons, which, taken into the system, produce symptoms much like severe cholera morbus, and often result fatally. These cases are most often caused by canned meats and sausage, but may be caused by any putrid meat.

Beef.—This should have an open grain, smooth and juicy; it should yield easily to pressure and have a rich carnation color. The fat should be of a whitish or cream color—the whiter and firmer the better. The bone should be small, and the flesh full. If the meat is purplish, and the fat yellow, it is poor beef. When fed on oil cakes, the fat will be of a deeper color, and the flesh flabby. Stall-fed beef has a lighter color than grass-fed, and beef long kept turns a darker color than fresh killed. Ox beef is best, and that of a heifer next. Beef of a dark-brownish or purplish-red should be avoided; this color is sometimes the result of some feverish disease, or the animal has been slaughtered before resting, after being heated and exhausted by driving—in either case, the meat is unwholesome. A strict observance of the above simple rules will insure even an inexperienced buyer against imposition.

The flavor of beef is richer, and it takes less of it to satisfy hunger than of the flesh of any other domestic animal, and it is on the whole the best for a standby.

In order to obtain a good juicy piece of roasting beef, the meat must be of the best quality, and come from a well fattened animal; it must also have been kept a sufficient time after being slaughtered to enable it to ripen a little before cooking, but not to the point of the slightest taint. Meat, if cooked immediately after slaughtering, is apt to be hard and tough.

The best roasting pieces are the sirloin and standing-rib pieces. The latter should have all the bone cut out, and be rolled up and skewered into a round shape; or the long string piece may be cut off and salted for boiling, and hashed for another day. It should be remembered that a good sized joint is more economical in the long run, even in small families, than a very small one.

Good boiling pieces of fresh beef, are the neck piece, the shoulder clods, the aitchbone, and any part of the animal left after the roasts and steaks are reserved. The boiling pieces may be kept in a pickle of brine, with sugar in the solution, and a little saltpetre.

The best parts of beef for steaks are the sirloin, porter-house, and the first cut of the round; the second round is also fairly good. Other round steaks can be chopped finely in a chopping bowl or minced in a machine now made for that purpose, for Hamburg or Salisbury steaks. Hamburg steaks are highly seasoned, but Salisbury steaks are more suited to invalids. Pieces of the shoulder-clod can also be minced and used in this way, as well as other nice pieces of beef from parts not suited for roasting or broiling without chopping. Chopped steaks are most desirable for old people and invalids, also for delicate children. People with good teeth should use them in order to keep them good.

The fillet of beef is the tenderloin—the choicest part of the animal. This, by foreign cooks is "*larded*," the method of doing which we explain elsewhere. In this country the combined flavor of fresh beef and salt pork is not so much in favor.

Veal.—This must be fresh killed to be good. The lean should be white, smooth and juicy, and the joints stiff; the fat should be white, firm and abundant. Stale veal is moist and clammy, the joints are flabby, and there is a faint musty smell. In buying the head, see that the eyes are plump and bright—not dull and sunk in the head. In buying legs, get those which are not skinned, as the skin is good for jelly or soup.

Veal is neither so nutritious nor so easily digested as beef. It is more easily digested when roasted or broiled than when boiled. Some people cannot digest veal at all, and it causes griping and diarrhoea if they eat it.

Veal is best when the animal is from 2 to 3 months old. The flesh of the bull-calf is the most suitable for joints, being of a firmer grain. That of the cow-calf is best for made dishes. The fillet of the cow-calf is generally preferred because it has the udder. The finest calves have the smallest kidneys, and when the veal is good, these are well covered with fat. Although veal can be obtained all the year round, it is best from May to September. The animal should not be bled before killing, for, although the meat is then whiter, the animal is reduced in vitality and weakened by the bleeding, and is in the condition of a diseased animal. When the flesh is of a yellowish color, it is either from an animal that was ill, or the meat has been kept too long since slaughtering.

Veal, like all young meat, has a tendency to turn very quickly. It is both unpalatable and most unwholesome when it is at all tainted, and it cannot be recovered, as brown meats sometimes are, by the use of charcoal. Therefore, it ought not to be kept more than 2 days in summer and 4 in winter. If eaten *quite* fresh, it is apt to be a little tough. To assist it in keeping, the pipe should be removed from the loin as soon as it comes from the butcher. The skirt also should be taken at once from the breast, the inside scraped and wiped, and dredged with flour. If there is any danger of the veal becoming tainted, wash it and put it into boiling water for 10 minutes; then plunge it into cold water till cool, wipe dry, and put it into the coolest place that can be found.

The roasting portions are the fillet, shoulder and loin; also the best end of the neck. The head is a splendid dish, properly managed; the feet make excellent jelly; both the breast and knuckle will form capital little affairs on one's dinner table, as the former will roast, and the latter, boiled and served with parsley, is accounted a delicacy by many. Veal is invaluable in the stock pot, being so rich and delicate.

Mutton.—This should be of a rich red color, close in the grain and juicy; the flesh should pinch tender and rise again when dented with the finger. The fat should be white—whiter than beef fat. Look at the vein in the neck of the fore-quarter—it should be a fine blue. Mutton is at perfection at between 3 and 6 years. The bones should be small and legs short. The flesh of wethers is better than that of ewes, as the latter are not killed as long as they are profitable for raising lambs, and so their flesh is apt to be tough from age.

Mutton is not so nutritious as beef, but it is more easily digested, and for this reason it is better for dyspeptics. Mutton broth is very valuable for persons suffering from dysentery or diarrhoea.

All parts of the sheep known as *joints* are roasted; the neck and leg are, however, frequently boiled. The haunch is a favorite joint and so is the saddle. From the loin, chops are cut; cutlets are also cut from the thick end, and sometimes from a part of the neck or fleshy part of the leg. In proportion to the flesh, there is less fat and bone in the leg than in any other part of the animal, so that it is the best to buy.

Lamb.—In this the flesh should be of a faintish white in color, smooth and firm to the touch. The fat should be white and light in appearance. If lamb has a greenish or yellowish cast, it is stale and unfit to eat. If the veins in the

neck-part show up blue and prominent in the lean, it is an excellent indication that the meat is good. Lamb is not nearly as nutritious as mutton, and is not suited for people of weak digestive power. The flavor is delicate, which is its chief attraction. The tissue is soft, gelatinous and watery.

Lamb should be fresh, and not bought long before being used. It is usually roasted, although the leg is often boiled when in season. The best and cheapest part for stews is the breast. If the flesh of lamb is pale and flabby, it is either from an unhealthy animal, or it was deprived of food and water for some time before being killed, and in either case the meat is unwholesome. Where economy is a consideration, lamb should not be bought before it is 5 months old.

Pork.—If the rind of pork is tough and thick, then it is old; if thin and springy, then it is young. In the best pork the meat is fine and close grained, without a superabundance of fat. The lean will almost break if pinched between the thumb and finger. The skin can be indented readily with the fingers. The fat should be white, smooth and firm. If the meat is clammy, or smells offensively, it is tainted and should on no account be bought. Small kernels in the fat indicate disease. Buy good pork or none at all.

In a sucking pig the tongue should be clean, the flesh pinkish in hue, and the skin clear and fresh.

Bacon and ham are more easily digested than fat pork, and so form an exception to the rule that fresh meat can be digested more easily than dried. The large amount of fat in good bacon makes it a good heat producer in cold weather.

The roasting parts of the pig are the leg, loin and spare rib (a favorite piece). Although the leg can be, and is often boiled, the remaining portions are usually salted, the leg forming a ham, and the sides flitches of bacon.

Ham and Bacon.—In selecting a ham, run a knife into it close to the bone; if the blade when withdrawn has an agreeable odor, the ham is good; if it has a greasy appearance and an offensive smell, the ham is bad. *Bacon* may be tested in the same manner; the lean should be red and adhere closely to the bone; the fat should be firm and pinky white. When bacon looks yellowish, it is rusty and not fit to use. The rind should be thin. Large bacon is almost always coarse, and lean bacon is seldom good.

Sweet-breads.—In selecting these for the table, choose those which are white, firm and plump, and which come from the throat of the calf. There is another kind which is really the *pancreas*, and which is only suitable for chopped dishes, like croquettes, etc.

Tongue.—This should be thick and firm, and on the under side there should be considerable fat. The tongue most used is that of the beef. That of the lamb can be bought both pickled and fresh, and that of the sheep, pig and calf can all be bought; calf's tongue is usually considered the best.

Venison.—In this, the fat should be clear, bright and thick. If the cleft of the haunch is smooth and close, it is young; if close and rough, it is old. It can be tested by the smell, like ham, by passing a knife along the bone of the haunch or shoulder. The flesh will look darkish if it is not new and sweet.

Sausage.—Even when the outside appears all right, bad sausage when broken is apt to show small cavities, and be sticky and soft inside; if these signs appear, or if there are yellow or greenish spots, or if it tastes rancid or smells putrid, it should not be eaten.

BUYING POULTRY AND GAME.

In buying poultry, 3 things are necessary—it should be young, in good condition and fresh. In selecting poultry, choose that which is full grown but not old. The safest rule in choosing poultry is to feel of the breast bone; when young, it will be soft and pliable like gristle; when old, it will be tough. Also when young and fresh killed, the skin is thin and tender, the joints not very stiff, and the eyes full and bright. The freshness of a bird can be discovered more by smell than anything else; a good buyer would prefer a bird untrussed. A bird should be roasted rather than boiled if there is any doubt about its freshness. No food should be given poultry for about 24 hours before it is killed, that there may be no food in the crop to sour.

In fowls, the light meats are not so highly flavored as the dark, nor are they so rich in nitrogen, but they are more easily digested.

Turkeys.—See that the legs are smooth and black, the spurs short, breast full, and neck long. The eyes should be bright and full, and the feet flexible. If the eyes are sunk and the feet dry, the bird is stale.

Chickens.—See that the feet are flexible, the skin soft and moist, and the eyes bright and full. If the eyes are sunk, and the feet dry, it is stale.

Fowls.—In a young fowl the spurs are short and the legs smooth. If the legs and combs are limber, it is young; if those are rough and stiff, it is old. When fresh, the vent is close and dark. In an old fowl the skin looks purplish, and the neck and feet are long and thin.

Geese.—A young goose has a yellowish bill and flexible feet, with few hairs on either. If the bill and feet are reddish, with many hairs, the bird is old; if the feet are dry, it is stale.

Ducks.—These, both wild and tame, when young have flexible feet; the belly should be thick and firm, and the skin clear.

Game.—In selecting this, pluck a few feathers from the under part of the leg; if the skin is not discolored, the bird is fresh. M. Soyer says, "The age may be known by placing the thumb into the beak, and holding the bird up with the jaw part; if that breaks, it is young; if not, it is old, and requires keeping longer before cooking." All old fowls may likewise be told by their hard, rough or dry feet. Wild game has a peculiar gamey smell, but it can readily be distinguished from that of tainted meat.

There is no bird whose flesh is poisonous in itself, or which may not in case of necessity be eaten. Persons have been poisoned by eating quail in the spring, but it was caused by the buds of the mountain laurel which the bird had eaten.

Partridges.—These, if young, will have black bills and yellow legs; if old, white bills and blue legs.

Hares and Rabbits.—These when fresh killed are stiff and whitish; when stale, the body is limber and the flesh darker. When young, the ears will tear like brown paper. In both, the claws should be smooth and sharp. In a young hare, the cleft in the lip is narrow, and the claws are readily cracked if turned sideways.

Squirrels.—These are judged much like rabbits, but the flesh is always more or less dark; when young, it will be smooth and firm; if old, it will be limber and flimsy.

Killing Fowls, etc.—Fowls, rabbits, and some other animals, being sometimes purchased alive, and the beauty of their appearance when dressed depending in some measure on their being killed in a proper manner, it is desirable that a cook should know how to kill them expeditiously and neatly.

Kill a turkey by passing a small penknife into the mouth and cutting it below the tongue; then pass the knife up through the head into the brain. After this, hang it up by the legs to let it bleed freely. All smaller fowls are killed by pulling and dislocating the neck at the head. In killing geese and ducks, commence by tying a string around the beak, then pinion the wings over the back to prevent fluttering; then make an incision or cut across the upper part of the neck, close to the head, and suspend by the feet to bleed freely. Kill a rabbit by holding it by the hind legs, letting the head hang down, and give it a smart blow with the edge of the hand behind the ears. All birds should be kept for a short time after being killed with their feathers on, and not *drawn* till they are to be used. Furred animals should not be skinned until they are to be used, but should be *paunched* as soon as they are cold.

BUYING FISH AND SHELL-FISH.

In selecting fish, choose those which are firm and thick, with bright, prominent eyes, the fins hard and stiff, the scales brilliant, and the gills bright red; such fish are fresh. When stale, the eyes sink and look flat and dull, the fins become soft and flabby, the gills dark, the scales dim, and the fish grows soft. If you find the eyes of a fish gouged out, be sure the fish is stale, and the dealer dishonest. Dress fish at once, sprinkle on salt, and use them the same day if possible; put them over ice in warm weather, or corn them for the next day. The offensive odor of stale fish is one of the best tests. All fish should be cooked at once after being packed in ice, for they will become soft and lose their flavor quickly afterwards.

Occasionally fish are brought to market, which are killed by the refuse thrown into the water by large manufacturing establishments; such fish will have a foul odor, and the flesh will be soft, spongy and yellowish. Never eat fish which are caught in putrid water. If, when boiling fish, the water blackens silver, it is caused by hydrogen sulphide (the same gas found in bad eggs). It comes from putrefaction, and the fish should be thrown away. A decomposing fish has a pale look, and a bluish belly.

The amount of nourishment contained in fish varies with the species, but as a rule they are less satisfying and less stimulating than butcher's meat, though some of the red-fleshed fish nearly approach it. Fish oil is more digestible than any other kind of fat, and therefore cod-liver oil is given to invalids. Dr. Pavy says: "The quality of fish as an article of food is influenced by the act of spawning, and presents considerable variations at different periods. It is just previous to spawning that the animal is in its highest state of perfection. . . . During the process of spawning, its store of fatty matter is drawn upon and it becomes poor, thin, watery and flabby. It is now said to be 'out of season' and requires time to arrive in condition again. In fish like the cod, where the fatty matter accumulates specially in the liver, this organ presents a most striking difference in volume and condition before and after spawning; whilst in such as the salmon, herring, etc., where the fat is dispersed among the flesh, it is the body which affords the chief evidence of change. As salmon enters the rivers from the sea for the purpose of depositing its spawn, it is plump, and well provided with fat. On its return, the contrast in its condition is very great. It is now so exhausted and thin, as to be looked upon as unfit for food." *Fish out of season* is never cheap, even if bought at a low price.

Cod, when edible, will have very red gills, the body thick at the neck, the flesh white and firm, and eyes still bright. *Shad*, if good, are white and thick, eyes bright, gills red, body stiff and firm. In *mackerel* look for the same points, but with more care, as mackerel is so tender that it does not carry or keep so well unsalted, as other fish. *Striped bass* depend on being put on the fire as soon as possible after being killed; if the eyes are sunken and the gills pale, they have been too long out of the water. *Trout* should have the gills red and hard to open, the eyes lustrous, and the body stiff. To *blue fish* and many other varieties apply the same rules as for striped bass. In choosing *eels*, the fat ones are best. They should be alive just before being cooked, as they lose their sweetness if long kept. In selecting *sturgeon*, choose those which are white, with tender skin, blue veins and even grain.

Oysters, *crabs* and all *shell fish* can be judged only by the smell as to their freshness. Oysters should close firmly on the knife when being opened; when they can be opened easily, they are good for nothing. The sooner they are used after being opened, the better.

Lobsters, *prawns* and *shrimps* should be very stiff after they are boiled, and the tails turn far inward. When they are soft and watery, they are not fit to eat. Lobsters should be alive, or else boiled before being offered for sale; they are black when alive, and red when boiled. In a lobster, when fresh, the tail, if straightened, will spring back into position. The male lobster is best, unless required for sauces, etc.; then the hen is best, on account of the spawn or coral. Lobsters and crabs, when good, *ought* to be heavy for their size.

Turtles or *terrapin* should be bought alive.

BUYING VEGETABLES.

These should be procured as fresh as possible, and the good housekeeper will endeavor to keep her table supplied all through the year with a good variety. Many varieties, like potatoes, cabbages, etc., can be best bought in the fall and stored in the cellar. Others may be canned at home, or bought in cans when needed. Those to buy, are potatoes, turnips, cabbages, squashes, onions, beets, parsnips, carrots, and artichokes. We elsewhere explain about keeping vegetables and also canning them. Vegetables should be ripe when purchased, and they are best when in full season and in greatest plenty, so that they are within the reach of those of moderate means. Most early, artificially raised vegetables, like peas, potatoes, etc., may be esteemed as rarities; but they are less valuable as foods.

Asparagus.—In buying this, see that the heads are full and green; when the head is not full, and the color is light, it is not desirable.

Beans.—Shell beans are dry and smooth when fresh; if they appear sticky and dull, they are old. *String beans* should be green, break crisply, and the bean should be just beginning to form in the pod; if they look yellow or wilted, they are not fresh, nor desirable.

Brussels Sprouts.—Select those which are fresh and crisp, and which are com-

pact and firm, like cabbage heads; loose heads are undesirable. Strip off the outer leaves and soak in cold, salted water an hour or so before cooking.

Cauliflower.—In buying this, see that the leaves are green and fresh, and the head a whitish cream color. If there are dark spots on the head, and the leaves are wilted, it is bad.

Celery.—See that the stalks break off crisply, and that the heads are solid and white. It is apt to be tough and stringy after spring opens, and bitter before the coming of frost. It is best during the winter.

Corn.—Green corn should be milky and tender, and the ears should be well filled out; if it is hard, and the kernels yellowish or straw color, it is too old, and even long boiling will not make it good.

Cucumbers.—If these are intended for salad, see that they are firm and green; if for pickling, have them small; (they are then called *gherkins*); if for cooking, they may be large and yellowed a little without harm.

Dandelions.—The cultivated are better than the wild; those are good in the spring, but are apt to be tough by the last of May.

Egg-Plant. Buy that which is not quite ripe and which is firm. The best is oval in shape, large and purple.

Lettuce.—In buying this, see that the leaves are green, fresh and crisp; keep it until used in a refrigerator, on ice if possible, or in a cold place at least.

Mushrooms.—These are best bought from reliable dealers only. In gathering them, they should be carefully distinguished from poisonous toadstools; confounding the two has caused many deaths.

Okra.—See that the pods are green and crisp. Although its use was formerly confined mainly to the South, it is becoming more popular at the North every year. It can be purchased nearly all the year round.

Peas.—In buying these, see that the pods feel cool and dry and look green. If the pods have turned light or are spotted, they are old or not freshly picked, and are not good.

Potatoes having large deep eyes cut to waste. A rough skin is said to indicate a mealy potato, and a smooth skin a waxy one, but that is not a sure guide, and the best way is to boil a sample and watch the result. Small potatoes are seldom economical, even at a low price, the waste in peeling being so great. Medium sized potatoes are generally the best to buy, choosing in preference those with small eyes. Small potatoes, after being well washed, may be boiled with the skins on, and peeled when cold for hash.

Spinach.—In buying this, see that it is green in color and crisp.

Tomatoes.—For table use, get those which are red and ripe, smooth, medium-sized ones being best; for pickling, green ones may be bought.

Sweet Herbs. The good housewife will find it convenient to keep on hand such herbs as thyme, sweet marjoram bay leaves and sage. A few cents will buy a bunch of each, and they should be kept dry and tied together, and in a box or paper bag. Parsley and mint are used green. The former is easily raised where it cannot be readily bought.

BUYING GROCERIES, ETC.

Butter.—In buying butter, *taste* it and *smell* it. If streaky or spotted, or with a reddish, speckly look, it is not good, and when cut with a knife, should it appear *milky*, it is a sign that it will not keep good long, for it has not been washed properly and it will waste. If it smells sour, it has not been sufficiently washed from the buttermilk; if it is veiny or open, it has probably had an inferior kind worked in. To choose salt butter, plunge a knife into it; if, when drawn out, the blade smells rancid or unpleasant, the butter is bad.

Milk.—In our article on the adulteration of food, we speak of the tests for milk. Where a supply of really pure and fresh milk is not available, the preserved milk will be invaluable. It is made by evaporating nearly the whole of the water in the milk, from which it is prepared, and adding sugar.

Cheese.—Select that, which, when rubbed between the fingers, melts and seems smooth. Poor cheese is crumbly and dry. Prof. Vaughn of Ann Arbor, Mich., says that cheese which will instantly and intensely redden blue litmus paper, should never be eaten. The test is easily made; if the cheese is dry, a bit of it should be moistened, and the litmus paper then applied.

Eggs.—In choosing eggs, apply the tongue to the large end; if it feels warm, the egg is fresh. Another simple test for eggs is to thoroughly dissolve 2 oz. of salt in 1 pint of water. An egg, dropped into this, if freshly laid, goes to the bottom; if 1 day old, it rises a little; if 3 days old, it floats in the liquid; if more than 5 days old, it projects above the surface, projecting more and more as by increased age the water inside evaporates through the pores of the shell, and air enters and takes its place. Before breaking an egg, hold it before a gas or candle flame and try and look through it; if clear, it is fresh; if cloudy, it is stale; if any dark spots appear, it is bad. No egg should be used for culinary purposes with the slightest taint about it.

Coffee and Tea.—These are best bought in considerable quantities, as a saving of several cents a pound may be obtained, if a half chest of tea or a bag of coffee is bought at a time. (See what we say about their adulteration in our article on the Adulteration of Foods.)

Barley.—Barley flower does not keep well; it is apt to acquire a hot, unpleasant taste. Buy little at a time, and keep in a cool, dry place.

Barley is a native of Western Asia, and has been cultivated from remote antiquity. It is hardy and can be cultivated over a very wide range of climate. It has too little gluten to make good bread. It is rich in phosphates, and though less nutritious than wheat, it is lighter and less stimulating, and in the form of gruel makes a soothing drink for invalids. It is rich in starch and contains some mucilage. *Pearl barley* is barley steamed, and the fibrous coats removed and the grains rounded and polished. *Patent barley* is pearl barley ground to flour.

Buckwheat Meal.—A small quantity of this at a time is enough to buy, as it does not keep very well.

Buckwheat is a native of Persia, and is killed by frost. It is rich in starch and albumen, and its ash is rich in potash and lime. The pancakes are not suited to those of weak digestion. Their continuous use gives rise to an itching of the skin and an eruption, the only specific for which, is to stop eating them for a time. The albumenous substances found in buckwheat differ materially from those found in the cereals, and its food value is less than that of wheat, oats or rye.

Corn or Indian Meal.—The common kind is best bought in small quantities as it does not keep well; the granulated, however, will keep for any length of time, and will be preferred to the other if once used. When decomposition begins in cornmeal, it has a rancid odor, and a little of it placed on moistened blue litmus paper (to be had at any drug store) will turn it red, while good meal does not affect the color.

The fineness of grinding cornmeal affects the bread made from it, fine meal making a compact, and the coarse a more open and spongy bread. Cornmeal should *always* be *thoroughly* cooked before being eaten; it is owing to its improper preparation that its reputation for indigestibility is due. It should be perfectly sweet and dry, and if at all "heated" or musty, it is entirely unfit for human consumption. Buy it in small quantities, and keep it in closed tins or a tightly closing jar, and in a dry place. For further particulars regarding corn, see "Vegetables." *Samp* is the whole grains hulled. *Hominy* is corn hulled and coarsely broken.

Cracked Wheat.—This will keep a long time. The crushed cooks the quickest, but the cut looks best when served.

Flour.—In buying this, the best is the cheapest. It is best to buy at least a barrel at a time, as it is not economy to buy in small quantities. There are many brands equally good. The amount of water which flour will absorb is a far better test of its quality than its color, because flour containing an abundance of gluten will absorb more water than that which contains a larger amount of starch; such flour will make more bread, and is therefore better to buy. Gluten is a tenacious, colorless or greyish substance, and was known in ancient times as birdlime. Starchy flour lacks adhesive properties; it crumbles in the hand, and may be blown about easily, while that containing a good amount of gluten, when pressed in the hand, remains compact and retains the imprint of the lines of the skin, while it has a creamy white tint. Don't buy flour of a bluish white tinge. A good test for flour is to put some in the hollow of the hand, make a hole in the center, and add enough cold water to form a soft dough; if the flour is of good quality and fresh, the dough when pulled out will not break easily, but will be tenacious, will harden in the air, and will so remain; if, however, on working the dough, it sticks to the fingers, softens, and on being pulled out, is brittle and breaks off short, the quality is poor. If there is any strong or unpleasant odor, it has begun to spoil and is worthless. Flour rich in gluten takes longer to rise

than that containing more starch, but it makes better bread. That containing more starch can be used for pastry.

Wheat flour is preferable to any of the other great vegetable products on which men chiefly live, since it is a far more agreeable food than maize (Indian corn) and far more nutritious than rice. It is probable that the health and bodily vigor of the inhabitants of temperate climates are largely attributable to the extensive use of this food. Wheat flour contains the following substances: starch, dextrin, cellulose, sugar, albumen, gliadin or gluten, mucin, fibrin, cerealin, fat, mineral matters and water. The first 4 substances (the carbohydrates) form nearly $\frac{3}{4}$ of the entire weight of the flour. The gluten and other albumenoids form from 10 to 15%, and the oils about 1%. The outer covering of wheat is a layer of almost pure silica, which is perfectly indigestible. In the inside layers of the covering are found cerealin and gluten, and the starch and some gluten are found in the center. The composition and value of the bran is now better understood than formerly. Coarse bran containing the outer layer of silica is valueless. This silica is indigestible and remains as a foreign body in the bowels, causing irritation and diarrhœa, and so hurries the food along the alimentary canal before the nutritive elements can be absorbed, while fine flour is nearly all assimilated. The inner layers of the sheath contain gluten, some starch, and the cerealin which is an aid to digestion, as it acts like disatase in the conversion of starchy food into sugar. The finest white flour is derived chiefly from the central parts of the kernel, whilst all the succeeding portions vary in color according to the degrees of admixture of the different layers of the skin. Good seconds flour is doubtless the most nutritious and cheapest to buy, although it does not produce the whitest bread; but to sacrifice nourishment to mere appearance is not wise. For the poor, it is the most economical.

Pastry flour, as it is sometimes called, is also known as *old process* or *St. Louis flour*. It is highly sifted and contains more starch and less gluten than the "seconds," but it makes excellent pastry and cake. Although bread made from it contains less of the gluten (which is the principal albumenoid element of flour) than is obtained from the other flour, that defect can be remedied by obtaining more of the albumenoid element in some other food; but many families will find it best to have some of both kinds of flour on hand, one for bread, and the other for cake and pastry.

SEMOLINA (also called **SEMOULE** or **SEMOLA**).—This consists of particles of wheat which, instead of being ground fine like flour, is reduced to grains, varying in size from grains of sand to small millet. As the gluten is retained it is nutritious. It is used for making puddings, thickening soups, etc. It is more used in France than in any other country, and in Paris a kind of bread is made of the coarser kinds and called *grauau*.

Graham.—A good deal that is sold is made from poor flour mixed with bran; the best is made from good wheat without being sifted. Keep it in a dry, cool place and it will keep for years.

The old idea that graham flour is good for those suffering from constipation is no longer entertained. The laxative quality is caused purely by the mechanical irritation of the intestines, caused by the small particles of silica (really like powdered glass) contained in the outer covering of the wheat. The irritation thus caused is sometimes dangerous. If a cathartic is needed, powdered glass is not the best thing to use. The bowel thus irritated, rushes the food along and finally ejects it before all its nutriment is assimilated, so that much is wasted. The poorer grades of graham flour are not fit to use. A moderate amount of the best grades may be used, but is not suited for a steady diet.

Oatmeal.—It is best to have this as fresh as possible, so purchase little at a time. The coarser keeps better than the finely ground.

Oats grow better in cool, moist climates than in those which are hot and dry, and therefore can be cultivated in situations where neither barley nor wheat can be raised. The meal is less white than wheat flour, and is chiefly eaten in the form of porridge. Owing to the absence of gluten, oatmeal cannot, like wheat flour, be made into light, porous bread. In many places, notably in Scotland, oatmeal forms an important food for the people, and it admittedly produces a healthy and vigorous race of men. The peculiar value of oatmeal is owing to the large amount of fat in oats. It is healthy and nutritious, and merits an extensive use, especially among working people and children, but some people with weak digestive powers find it irritating.

Groats or **grits** are oats deprived of their outer husks. *Emlden Groats* are the same, broken into smaller pieces.

Ryemeal.—As this does not keep well, it is best to purchase it in small quantities. For bread and muffins the meal is more desirable than the flour.

The native country of rye is unknown. Rye flour is little used now for making bread, except when mixed with wheat flour. It is inferior to wheat flour in nutritive properties, flavor and digestibility.

Hominy.—The highest grade is the best, and it will keep a long time.

Macaroni.—This, when good, has a yellowish tinge, and when cooked, it does not break or burst.

Lard.—See that this is white, free from any unpleasant smell, and solid. Leaf lard is best, and is made from the leaf fat taken from the ribs of the hog.

Arrowroot.—This is found in perfectly white lumps when pure, and they can be crushed readily between the fingers. If, when boiled with water and constantly stirred, a foam appears on top, it has been adulterated with flour; if pure, there will be no foam.

Almonds.—The best are long and oval-shaped; the more common are round and flat.

The almond is the seed or kernel of the almond tree, which resembles the peach, and is indigenous to Persia, Syria and the north of Africa. The 2 most important kinds are the sweet and bitter. The *bitter* are used to flavor confectionery, etc., but they contain much prussic acid, and a single drop of the essential oil will kill a bird, and 4 drops a dog; these have little domestic use. The *sweet* are the only ones adapted for ordinary use. Although considered nourishing, they frequently disagree with persons of weak digestion, the husks being especially indigestible, so that they should always be blanched. Eaten in large quantities, they are purgative.

Cocoanut.—As there is danger in the summer that the heat will sour the milk, these should be purchased carefully.

Pistachio nuts are the fruit of a tree growing to the height of 15 or 20 feet. The tree came originally from Asia, but now grows plentifully in the southern parts of Europe. The nuts need to be blanched like almonds. They are costly, and as they much resemble the almond in flavor, the latter is often substituted for them in flavorings, etc.

Nutmegs.—Prick these with a pin; if oil runs out, they are good.

Nutmeg is the kernel of the fruit of an evergreen tree now cultivated in the West India Islands, etc. It contains about 6% of a pungent essential oil. It is aromatic, stimulant, and contains narcotic properties.

Raisins.—The best way is to buy a small box in families where they are much used, but they do not improve with age. For puddings and fine cakes the "seedless" are preferred, but the "Valencia" are used more generally because cheaper. Loose "Muscatels" and layer raisins are the best for table use.

Raisins are dried grapes. There are 2 ways of preparing them. One way is to partially cut through the stalk, and then let the fruit shrink and dry on the vine, by the heat of the sun. The other method is to dip them while yet on the vines into a hot solution of alkali, derived from wood ashes, to which olive oil and salt are added. The oil causes them to shrink and wrinkle, and the alkali removes the waxy coat which impedes their drying. They are then dried in the sun in bunches, on lines or prepared floors. Muscatels are prepared by the first method, and are sometimes called "raisins of the sun." Raisins contain more sugar and less acid than grapes, and are therefore more nutritious, but eaten to excess they are apt to derange the digestive organs.

Rice.—The southern is better than the Indian rice, and cooks more quickly. It should be examined occasionally to see if insects are getting into it. That which swells most in cooking is best.

Salt.—This if good should be dry, white, fine and perfectly soluble in water. Lime and magnesium are found in the coarser kinds; the color is dark often, and it absorbs moisture from the air. Chloride of magnesium makes it absorb moisture, and gives it the bitter taste sometimes noticed. If adulterated, it is usually with gypsum (sulphate of lime), which gives it a dull look, and is not readily soluble in hot water.

Spices.—These are best bought in small quantities, but a little of all kinds should be kept on hand. See what we say elsewhere about their adulteration.

MIXED SPICES.—Take 2 even teaspoons of allspice, 2 heaping teaspoons of cloves, 2 heaping teaspoons of mace, and 6 heaping teaspoons of ground cinnamon, and thoroughly mix; use for puddings or dark cakes.

It is difficult to draw a very distinct line between spices and condiments, but spices are generally added to articles of food containing sugar, while condiments are eaten with meat, and generally with any foods which contain common salt. Cloves and allspice are, however, eaten with meat, and cinnamon, nutmeg and mace with sweet foods. Spices can be used in moderation, but if used in excess, they irritate the mucous membrane and are harmful, often causing dyspepsia.

ALLSPICE is the popular name given to PIMENTO or JAMAICA PEPPER. It is the berry of a tree (the *Pimenta Officinalis*) which grows in the West Indies and South America, and attains a height of 15 to 20 feet. The berries are picked green and dried in the sun, when they become black. Pimento contains about 4% of an aromatic pungent oil much like cloves. It is a mild, agreeable and innocent spice.

ANGELICA is an aromatic herb. Its roots are used as food in Norway. The stems, boiled in syrup, yield a sweetmeat. The seeds are dried and used for flavoring some cordials.

CARAWAY.—These seeds are the fruit of a biennial plant something like a carrot. The root is sometimes used like the carrot, but is a little too strong. The seeds contain an essential oil, and are used to flavor cookies, etc.

CASSIA is the dried bark of a Chinese species of cinnamon, and "Cassia Buds" are the unripe fruits of the same tree.

CINNAMON.—This is the inner bark of a tree, a species of the laurel family which grows to the height of 20 or 30 feet, and is found in Ceylon, Java, etc. "Clove Oil" is distilled from the leaf. Cinnamon contains a fragrant essential oil. It is best to buy it in the stick or roll; pound it in a mortar, and sift it fine for use.

CLOVES are the dried flower buds of the clove tree, an evergreen tree belonging to the

myrtle order. Our supplies come from Zanzibar and the West Indies. They contain a considerable quantity of a pungent oil which is aromatic and stimulant.

CORIANDER SEEDS come from an umbelliferous annual plant found in Europe. It contains a little essential oil.

GINGER is the root of a plant deriving its name from the mountain Ginger, in Hindoostan, of which it is a native. It now comes chiefly from the East and West Indies. It is dug up in January or February, scraped, washed and carefully dried. It contains starch, gum, an acid resin which gives its hot taste, and a volatile oil which gives its odor. The best comes from Jamaica. There are 2 kinds—white and black; white is considered superior. It is aromatic, stimulant, and in hot weather is valuable as a medicine. It is less heating to the system than might be expected from its taste.

MACE is the membrane which surrounds the nutmeg. It contains about 4½% of an aromatic oil, and its general qualities are similar to the nutmeg.

PEPPER.—Of this aromatic berry or fruit there are several kinds. The *black* is derived from berries growing on vines something like grapes. It grows in Malabar and other places. Each berry contains a seed of a brownish color, which is black when dried, and is the pepper of commerce. *White* pepper is made from black by steeping the seeds in lime water and then rubbing off the coats, and is therefore less pungent than the black. Black pepper contains a concrete acrid oil, a volatile oil, starch, malic and uric acids and lignine. Small quantities are stimulant, but large quantities are irritating. Even small quantities produce detrimental effects on inflammatory constitutions. *Cayenne* pepper is made from the dried pods and seeds of various species of capsicum. It is stimulating, and though not used as much as black pepper, is more wholesome. *Chillies* is a Mexican name signifying pods. When ripe, the pods are dried in the sun, mixed with a little salt, and kept in closely stoppered bottles for use.

Starch.—The best is the cheapest, and in a large family a saving may be made in buying by the quantity.

Sugar.—The granulated sugar is less apt to be adulterated than the moist brown sugar. It is usually best to keep some of the granulated, powdered and brown on hand, using each for the purpose for which it is best adapted. The margin of profit on sugars is small, and little is saved by buying in large quantities.

Vanilla Beans.—The best come from Mexico. They should be fresh, pliable enough to wind around one's finger, and oily. Do not buy those which are dry and brittle, or which have been split open, as that is sometimes done, and part of the seeds extracted. If they are covered with fine needle-like crystals, looking much like hoar frost, they are of the best quality, and rich with aroma.

The vanilla bean is the fruit of a plant (an orchid) indigenous to Mexico, Peru, Brazil, etc. The fruit is cylindrical in shape and is filled with small, black, oily seeds. Its odor is due to the presence of benzoic acid, and is so powerful that it is said to intoxicate those who climb the trees to gather it. Vanilla is not suitable for flavoring food for invalids because of its medicinal qualities. It is a gentle stimulant and promotes digestion. The Mexican beans are the best.

The *tonka* beans are the seeds of the *Dipterus odorata*, which is a native of Guiana. The odor comes from a volatile oil which they contain.

KEEPING PROVISIONS.

"Economy of food is the wealth of Nations."

By properly caring for the provisions which are bought, a considerable saving can be made in the housekeeping expenses, and every housekeeper should understand the best methods of keeping the various articles of food, and should make arrangements for taking care of them. A good cellar and store room are among the most important rooms in the house, and no better investment can be made than to fit up such rooms suitably. Those who are not fortunate enough to have rooms of this kind such as they would like, can usually fit up some substitute by exercising a little ingenuity. In the absence of proper places for keeping provisions, a hanging safe, suspended in an airy situation, is the best substitute. Carelessness in the use and care of the provisions marks the poor and shiftless housekeeper.

The larder should be cool and dry, with the outer air playing freely through it, and it should be in the shade—if possible have it face due north, so that the sun never comes in. It should be impervious to vermin and insects, especially flies. A few shelves, a few strong iron hooks on which to hang meat, and some wire covers for cold meat, are among the principal requisites.

MEAT, GAME AND FISH.

Meat requires a dry, airy place, and should always be hung up, not laid on a plate or dish, and before being hung up it should be wiped. The most favorable weather for keeping meat is when it is cool, clear and dry. When the atmosphere is thick and moist, meat will soon taint. Keeping meats for a few days in a cool place improves them, except veal, lamb and pork. In most cases fresh meat is cooked too soon after being killed, which arises, perhaps, from the general want of proper larders, and the dread of the meat being spoiled. The consequence is, that, instead of being palatable and tender, the meat is tough and disagreeable, and not so nutritious or easily digested as it ought to be. But, although it is advisable that animal food should be hung in the open air until its fibres have lost some of their toughness, yet, if it is kept till it loses its natural sweetness, its flavor becomes deteriorated. As soon as the slightest trace of putrescence is detected, it has reached its highest degree of tenderness, and should be dressed at once. Meat is frequently cut from an animal and cooked at once after death, in warm climates, and before what is called *rigor mortis* (the stiffness of death) sets in. Meat is harder to masticate and digest during this rigor, which comes on soon after death, and the object in "keeping" the meat, as is done in temperate climates, is to let this rigor pass off, as it is then better for eating; pounding the meat, after cutting it in thin slices, hastens the process. Domestic fowls, wild game frequently, frogs, fish and some mollusks, are about the only animals cooked in this climate before this rigor comes on.

Meat may be kept fresh for 5 or 6 days in the hottest weather by putting it in a stone crock, and completely covering it with skimmed milk, just turning sour or getting thick; but the liquid must fully cover the meat, and it should be kept in as cool a place as convenient; then wash it well before cooking it.

On buying meat in hot weather, if you have no refrigerator, wipe it dry, dredge it with flour and pepper, and hang it in the larder; these can easily be washed off before it is cooked. Or it may be prepared as above, wrapped in a dry cloth, and covered with charcoal or ashes. To keep it from tainting, charcoal is about the best thing.

Should meat be tainted at all, it is best to wash it with vinegar and water, or powder it with charcoal, and then wash it off with water; it will afterwards be better roasted than boiled. The habit which many people have of putting meat di-

rectly on the ice, in its wrapping paper, is a very bad one; the juices are drawn out by the water. It is not the ice but the cold air which checks decay, so that meat, etc., should be placed *near* the ice but *not* on it. After keeping meat *on* ice, it should be cooked immediately on taking it off. When it is seen that meat will not keep long, it is better to parboil or half roast it at once; after which, when it is cooked, it must be plunged into boiling water, if to be boiled; or, for roasting, put it before a very hot fire to start. During the summer months it is difficult to procure meat that is not either tough or tainted; it should, therefore, be examined when it comes in, and if flies have touched it, the part must be cut off and the remainder well washed. To protect meat from flies, one method is to use a wire meat safe, or cover the joints with a long, loose gauze, or some thin cloth, and hang them from the ceiling of a dry room. Pepper and ginger should be sprinkled on the parts likely to be attacked by flies, but should be washed off before the joint is put to the fire.

Keeping meat in winter is comparatively easy, and it should always be hung till in good condition; it is better to do this at home than trust to the butcher.

If a little creosote is placed on a small plate immediately under a piece of meat as it hangs in the safe or larder, and a piece of cloth is spread over both meat and plate, the creosote will form an atmosphere around the meat which will keep it for 3 or 4 days longer than otherwise, and it will not impart the slightest smell or taste to the meat. It will also free the larder from flies.

When meat is hung in a damp place and has become moldy, and what is usually termed faint, it may be quite restored by being pared where necessary, and washed all over with vinegar and water before cooking.

Frozen meat should be thawed out gradually by soaking it in *cold* water; a piece weighing 10 lbs. will take 10 to 12 hours to thaw, but do not cook it until it is *entirely free* from frost. A coating of ice may gather on the outside, but it will easily cleave off. Do not let meat freeze, however, if you can help it.

As for cold meat, it may be said, that when newly cooked meat is brought from the table, and is to be put aside for after use, it should be put on a clean, dry dish, placed in the larder, and covered with a wire cover; if any liquor or gravy is left about it, the meat is apt to become sour. Cold meat is always best when it has not been cut while warm, as then the juices have not run out, and remain to enrich the meat.

Beef may, in favorable weather, be kept from 4 to 10 days to advantage. The kernel in the round of beef, and the marrow from the bone should always be taken out in hot weather before hanging, as it taints before the joint itself. Those living in the north will find it economical to buy a hind quarter in cold weather and have it cut up; that which is not needed at once can be packed with ice or snow and kept.

Mutton may, in favorable weather, hang 2 or 3 weeks or more, as it will keep longer than beef. When wrapped in a cloth wet with vinegar, and hung in a dry cellar, it keeps well and improves in tenderness. Epicures like it hung for a month, and it will keep for that length of time without taint if the weather is favorable.

Veal, lamb and pork ought not to be kept more than 1 day, or 2 days at the most. It is best to cook it soon after being killed. If lamb has to be kept, it should be partly cooked, as that is the most certain way to preserve it from taint.

Game and Poultry.—Game may be kept more easily than poultry, but it requires care and constant watching to bring it exactly into condition. No rules can be given as to how long it may hang, for not only does it depend on the kind of game and the weather, but still more on the taste of the individuals who have to eat it. Some people like it almost putrid, while others cannot touch it if at all high; but it may be said that when the feathers come out very easily, it is generally considered fit for cooking. Old game will hang longer than young, and afterwards will require longer cooking. Game is frequently hung 2 or 3 weeks.

When game or poultry becomes strong, put some charcoal in water and soak the bird in it for a few hours, which will sweeten a bird that seems spoiled. Some people put soda in the water, but the charcoal is best. Sportsmen who wish to ship game can send it a long distance if they will shut out the air by tying a string tightly about the neck, and then stuff some charcoal up the vent.

Turkeys may be kept a fortnight. Ducks and geese, if their feathers are left on and they are hung by their legs, may be kept in a good larder for several days. Great care must be taken in picking feathered animals which have been kept, for the skin will be easily torn. Even delicate birds can be preserved if they are drawn as soon as they are killed, and then carefully washed in a solution of soda and water; afterwards dry, put some charcoal inside, and after spreading a cloth over it, hang it up in some place that is cool and dark. All water birds should be eaten as fresh as possible, as their flesh is oily, and soon becomes rank. Poultry is eaten fresh, and does not require hanging.

Fish of nearly all kinds is best when cooked as fresh as possible. If it has been kept on ice, it should be cooked at once on taking it off, as it will get soft soon and its flavor will be lost. When fish is plentiful and cheap, and a larger quantity is purchased than is immediately wanted, any surplus which will bear it, should be potted or pickled or salted and hung up; or it may be fried and then used for stewing the next day. Fresh water fish, having frequently a muddy smell and taste, should be well cleaned and soaked in strong salt and water. If of a sufficient size, it may be scalded in salt and water, and afterwards dried and dressed. Cod-fish, whiting and haddock are none the worse for being a little salted and kept a day; if the weather is not very hot they will be good for 2 days. In cleaning fish it is best to use as little water as is consistent with cleanliness.

Cold fish should be saved, as it may be utilized in salads and prepared in many attractive ways.

Sprinkling fish with sugar will keep them a long time, and it does not injure their flavor. Keep them in a horizontal position to enable the sugar to penetrate them well. Salmon is improved by this treatment.

To preserve fish alive for transporting from place to place, stop up their mouths with crumbs of bread steeped in brandy, and pour a very small quantity of brandy into them; pack them in clean straw. The fish will become quite torpid, and in this state may be kept 10 or 12 days. When put into water, they will gradually recover after 3 or 4 hours.

To keep *oysters*, put them in a tub and cover them with salt and water; leave in 12 hours, then take them out and let stand 12 hours, without water. If left without water every alternate 12 hours they will keep much better than if left in it constantly. Never use the same water for them twice. Or live oysters in the shell may be put in some cool place, like a cellar, and sprinkled with salt and cornmeal, then cover with a thick, wet cloth. Repeat every day, and keep the cloth wet. They will keep this way 10 or 15 days. When taken from the shell, keep them on ice, and the sooner they are eaten, the better.

VEGETABLES.

A great deal is lost in most households because this class of provisions are not suitably cared for, and we offer suggestions about keeping the more important articles. We elsewhere give the best methods of canning and preserving.

All vegetables, when cut, may be kept fresh by putting the *stalks* into water; servants generally insist on immersing the *whole vegetable*, which favors decomposition. All withered vegetables should have the stalks freshly cut, and the ends should then be put in a bowl of water, just as withered flowers would be treated. Through the stalks they suck up water enough to fill their shrunken cells, and that makes them green and stiff once more; but it is a mistake to plunge the entire plant under water. Of course this does not apply to the washing of vegetables and salads, which cannot be too complete.

Potatoes are sometimes laid in the sun to dry, but if left too long in the sun, they turn yellow or green and strong, and are then unfit for food. All green vegetables should, as a rule, be used as soon after being gathered as possible. They begin to ferment and lose their wholesomeness and flavor very shortly after being taken from the ground. When they have to be kept for a day or two, place them in a perfectly dry, dark and cool situation, but not exposed to currents of air. Aim to keep each vegetable separate from others to prevent contamination of flavor. Do not wash them until immediately before being used.

To keep vegetables like onions, turnips, etc., during the winter, a common method is to bed them in sand, in a cool place, but where they will not freeze; or air slacked lime may be used. Another method is the following: Sink a barrel

(or a box or cask, which will be better) $\frac{3}{4}$ of its depth into the ground in the cellar; heap dirt around the part projecting out of the ground, with a slope on all sides; in this, place the vegetables you desire to keep; cover the top with a water-tight cover, and when winter sets in, throw hay, straw or leaves on top. If the bottom is out of the cask or barrel it will be better. Cabbages, celery and other vegetables will keep in this way as fresh as when taken from the ground. Celery should stand nearly perpendicular, celery and earth alternating. Freedom from frost, ease of access, and especially freshness and freedom from rot are the advantages claimed. Again, Prof. Maynard, of the Mass. Agricultural College, writes: "Many cellars are often so warm or dry that such vegetables or roots as the turnip, beet, parsnip, etc., do not keep well. To overcome this difficulty, soil is often used to pack the roots in, but the best way to preserve them, and the one requiring the least labor, is as follows: In the coolest and darkest corner of your cellar spread a thin layer of fine, moist leaves. Those of the apple tree are as good as any. If there is a little admixture of snow or frost, all the better. Upon the leaves place a layer of roots one deep, then a layer of leaves, and so on until the pile is complete. Very large quantities should not be stored in one pile, as the leaves would be liable to heat. By this method I have kept the common English turnips in perfect condition until May 1, and beets until August. They are thus easily preserved and not as difficult to get at as when stored in sand or soil."

Roots of all kinds may be preserved in an ice house, where one has one, till the return of the natural crop. Fill the cracks in the ice with straw, cover the top with the same material, and on it place baskets, boxes, casks, etc., and fill them with carrots, turnips, beet-roots, potatoes, etc. They will thus keep fresh and uninjured.

Most vegetables keep best when the temperature is low, but they should not freeze. Some articles, like apples, keep best in quite a low temperature, and may be kept for months after freezing solid, if not moved or disturbed while frozen. Vegetables which are frozen, or touched with frost, should be thawed out gradually, by putting them in *cold* water until the frost is all out.

Artichokes.—These keep well bedded in sand in a cool place. Another plan is to take as many as you intend to keep, and boil them barely enough to be able to pull off all the leaves and choke; lay the bottoms on a tin plate and put them in the oven. When thoroughly dry, and quite hard, put them in a paper bag, and hang them in a dry place. Before using, they must be soaked in warm water 3 to 4 hours, changing the water very often. Let the last water be boiling hot; the bottoms will then be very tender, and eat as well as fresh ones.

Beans.—To keep these fresh for winter, procure a wide-mouthed stone jar, lay on the bottom of it some freshly-pulled French beans, and over them put a layer of salt; fill the jar up in this way with alternate layers of beans and salt. The beans need not all be put in at the same time, but they are better if the salt is put on while they are quite fresh. They will keep good all winter. On using any, steep them for some hours in fresh, cold water. A pinch of baking soda in the water in which they are boiled gives them the bright green color they have when fresh. Cover the top layer with plenty of salt, and keep the cover tied on tightly between the times of using the beans.

Dried string beans are excellent in winter. Cut the beans up in the usual lengths, dry them, and put them in a bag. In winter soak them, and cook them in the usual way.

Cabbages.—Gather them before the severe fall frosts; let the coarse, outside leaves remain on them. Fix a strong string around the stalk, and suspend them from the timbers of the ceiling, head downwards. The cellar should be cool and dry. This will preserve them to a certainty. Another good method is to cut the cabbages from the stump, pack them close in a barrel or box, and fill up all vacancies with dry chaff or bran, and keep in a dry cellar.

Cauliflower.—This may be kept till February by putting it in a cellar, and covering the roots and stalks with earth. Or it may be placed in a trench in the garden, roots down, and covered with earth close up to the head, and then covered with hay or straw 4 or 5 inches thick, placing just enough earth on the straw to keep it in position. This method answers in the latitude of New York, but in colder climates a thicker covering would be required.

Celery.—This may be kept in good condition all winter in a cool, dry cellar, by

having it set in earth. When a small quantity only is wanted, take a box, stand the celery up in it, and place a little earth about the roots.

Celery may be kept fresh for a week or more if it is wrapped up, first in brown paper, and then in a towel, and laid in a cool, dark place. Before it is wanted for the table, let it lie in cold water for an hour. This will make it crisp.

Cucumbers.—These are much improved by being placed with the stalk downward in a jug of cold water for some hours before being used. A large cucumber may be kept in this way and used in portions for 2 or 3 days. They may be kept for a longer period by cutting them when at their best, and packing them in dry sand, so that they do not touch each other, and keeping them in a cool, dry place.

Horseradish.—To keep this, grate it in the season, while green, put in bottles, fill them up with strong vinegar, cork tightly and set away in a cool place.

Mushrooms.—Pick and cut off the stalks, wipe them clean, from the large ones remove the brown part, peel off the skin, and lay them on paper in a cool oven. When fully dry, put them into paper bags and keep them in a dry place. When required for use, simmer them in gravy, and they will swell to their original size.

Onions tied up in strings in the old-fashioned way invariably keep much better than those laid on shelves or on the floor. They should be kept in a very dry place. Or, put them in boxes or barrels, and if there is danger of their freezing, cover them with straw or chaff at the approach of cold weather. Store them in the coolest part of the cellar. They are often injured by being kept in too warm a place. Alternate chilling and thawing destroys them, but if put where they will remain frozen all winter, no considerable injury will result if they are thawed out slowly, and in a dark place, but use them soon afterwards.

Parsnips.—Before the ground freezes in the fall, enough should be dug to use during the winter. They can be stored in barrels or boxes, packed in dry sand or chaff. Keep them in a dry and cold place. The balance can be left in the ground where they grew until the frost is out in the spring, when they should be dug and used before they begin growth, for as soon as that takes place they lose their sweetness.

Green peas may be kept for winter use as follows: Gather the peas when plentiful, shell them, and then wash and scald them in hot water. When thoroughly drained put them into bottles and fill up each one with strong brine; at the top of the bottle pour a thin layer of salad oil. Cork and seal the bottles, which must be quite full and kept upright. Or, when full grown, but not old, pick and shell them, and spread in thin layers on dishes or tins, and dry them *very gradually* in a cool oven or before a bright fire, stirring them frequently. When hard, let them cool, pack in stone jars, cover close, and keep in a very dry place. When used, soak them in cold water for several hours before boiling, till they look plump; they are excellent for soup.

Potatoes.—These should not be exposed to the sun and light any more than is necessary to dry them, after digging them from the hill. Every 10 minutes of such exposure, especially in the sun, injures their edible qualities. Dig them, and when dry, put them immediately in a dark cellar. Apples and potatoes should not be kept in the same cellar unless necessary. If so, the apples should be kept in the coolest and the potatoes in the warmest part. Grocers who expose potatoes for sale in the hot sun would do well to remember what is said above.

To keep potatoes, intended for the table, from sprouting, take boiling water, pour it into a tub, and turn in as many potatoes as the water will cover, and leave them 2 or 3 minutes; the hot water will scald the eyes and prevent their growing; then pour off all the water, let them dry, and lay them on boards one deep, or put them in sacks, and keep them in a cool, dry place, and you will have good potatoes the year round. Do not leave them in the light, as that affects them unfavorably.

Sweet potatoes need a warm, dry temperature. They keep well when packed in barrels of dry sand or dry leaves. A temperature of 45° to 50° is best for them.

Squashes require a very dry place. They may be bedded in sand. Keep them cold, but do not let them freeze. They keep well on shelves in a dry, warm closet; grocers often keep them on the top shelves of the store.

Pumpkins.—To dry pumpkins, take those which are ripe, pare, cut into small pieces, stew soft, mash, and strain through a colander as if for making pies. Spread this pulp on plates, in layers not quite an inch thick; dry in the stove oven, kept at so low a temperature as not to scorch it. It will become dry and crisp in about a day. Store these sheets in a dry place. To use, soak the pieces over night in a little milk, and they will return to a nice pulp as delicious as the fresh pumpkin. The quick drying after cooking prevents any portion from slightly souring, as is always the case when the uncooked pieces are dried.

Tomatoes.—Keep in a cool, dry place, but they are very perishable and should be cooked or canned soon, or they will decay.

Turnips.—These should be kept dry, and as near the freezing point as possible, as they sprout easily. They may be kept during the winter buried in the earth.

Herbs, to Dry.—Gather them on a very dry day, and just before they begin to flower. If gathered when damp they will not be so good. Free them perfectly from dust and dirt, pick off all bad or discolored leaves, divide them into small bunches with their roots cut off, and dry them quickly in a hot oven or before the fire, as by this means most of their flavor will be preserved. The quicker they are dried, the better, but be careful not to burn them. Tie them up in paper bags and keep in a dry place. Or, what is a better plan, after drying as above, pick off the leaves, pound them, pass through a fine sieve, put each kind in a separate bottle, cork tightly, and label it clearly. Have them cold when bottled.

HERBS.—These are a most valuable addition to the resources of the cook, and the more useful ones should be in every house. If judiciously used for seasoning, they add greatly to the flavor and attractiveness of food. Much of the charm of French cookery comes from the skillful use of seasoning. The useful herbs can be bought for a small sum, but almost any housekeeper can easily raise all she needs with very little trouble. Either basil, mint, sweet marjoram, parsley, sage, thyme or tarragon can be raised in little boxes on a window sill, or in the yard in a sunny spot. The time for gathering them is as follows: Mint, parsley and tarragon in June and July; marjoram and thyme in July and August; sage and basil in August and September.

BAY LEAVES are taken from a species of laurel, *L. Nobilis*. It is a native of Asia Minor, but is cultivated as a handsome evergreen. The leaves are large, shining and lance-shaped, and are bitter, aromatic and narcotic. They are used by cooks and confectioners because of their agreeable flavor. Most of the dried figs imported into this country are packed in bay leaves. The laurel among the Greeks was sacred to Apollo, and from it the garlands were made which were placed on the heads of heroes and poets.

BORAGE is a useful plant that does best in a light soil, as a very rich soil makes it too luxuriant and affects its flavor. The young leaves can be made into a salad, or they can be dried for winter, and used to flavor soups and sauces.

CHERRY LAUREL is another species of laurel (the *Cerasus Laurocerasus*). Its leaves are used for flavoring blanc mange, puddings, sauces, etc., but cooks ought to understand its true character. The leaves should be used with great caution, and but few should be used at a time, because when wet with water they yield prussic acid, which is a deadly poison. This same acid is found in bitter almonds and gives them their flavor, and a little of it is also found in peach pits and apple seeds.

SWEET BASIL is a tender annual, a native of Asia. The leaves and leafy tops are highly aromatic, and their flavor much resembles that of cloves. It is much used in French cookery, but not much by English or American cooks.

THE MARJORAM is a plant of which there are several varieties. The sweet or knotted marjoram is the one usually preferred in cookery. It is a native of Greece. It is rather tender, and requires a light, dry soil, but if taken in doors and kept in a warm, sheltered place, free from wet, it may be kept through the winter. The leaves have an agreeable aromatic flavor, and are used in soups, stuffings, etc. Medicinally it is stimulant, tonic, and useful for nervousness.

MINT.—There are many varieties of mint, and the species are distributed nearly all over the world. The green mint or *spearmint* is the variety commonly used in cookery, the leaves being used in sauces and salads, and to counteract the flatulent properties of some young vegetables. Spearmint is highly esteemed as an anti-spasmodic and stomachic. *Peppermint* is another variety, possessing the same properties, but is much stronger. The oil which is extracted from it is a carminative and stimulant, and is used for flavoring lozenges, etc.

THE PARSLEY is a hardy biennial plant, a native of Eastern Europe. There are several varieties, the Hamburg parsley being grown for the sake of its roots which are eaten like parsnips. The leaves of parsley are nutritious and stimulating, and are used as a flavoring for soups, etc., as well as for garnishing foods. The root is diuretic. The fruit (seed) is a deadly poison to many birds, especially parrots.

To Keep Parsley for the winter, use that which is freshly gathered, wash it free from grit and dirt, and put it into water which has been slightly salted and well skimmed, and let it boil 2 or 3 minutes; then take it out, drain, and lay it on a sieve before the fire and dry as quickly as possible; store away in bottles in a dry place. When wanted for use, pour a little warm water over it and let it stand about 5 minutes.

THE SAGE is a hardy shrub, a native of the south of Europe. There are several kinds of it, known as the red, the green, etc. Its principal use in cookery is for stuffing and sauces, the red being most agreeable for this use, and the green next. The other varieties are used for medicinal purposes.

SAVORY.—Of this there are 2 kinds, summer and winter. Summer savory is grown for seed and used both green and dried; winter savory can be grown from slips and cuttings. Both kinds are highly esteemed in cookery for their powerful aromatic flavor.

THE TARRAGON is a hardy plant which grows in light, dryish soil. It is a native of Siberia, and belongs to the order *Compositæ*. It has smooth leaves, of a bright green color, which are agreeable to the taste, and are used principally for making the tarragon vinegar.

THE THYME is a native of Spain and Italy, and was well known to the Romans. Its leaves possess an agreeable and highly aromatic flavor, and are used, in both a green and dried state, to season soups, sauces, stuffings, etc., but a little of it goes a long ways. The *Lemon Thyme* is a variety of the wild thyme, remarkable for its smell, which closely resembles the rind of a lemon.

FRUIT.

Fruit, as well as vegetables, will keep very fresh if you can manage to put the stalks in water, only it must not be in a close or dark place. When apples, oranges, lemons, pears, etc., are to be stored, they should not touch each other, and they should be protected from heat, cold and damp, as much as possible—sunshine is not desirable. A fruit room does not require much ventilation, unless it can be given without altering the temperature. Alternating from heat to cold produces condensation and evaporation of moisture, which soon causes decay, and it should therefore be avoided. Fruit should always feel dry to the touch. Fruit rooms which are above ground should be double-walled and ceiled, but when wholly or partially sunk in the ground this is not so important, if damp is otherwise excluded.

Many fruits are best kept by being dried, preserved, or canned; those subjects are fully discussed elsewhere in this work.

Apples.—The best method of keeping apples is to carefully wipe each one, put them on shelves, and cover them with white paper; keep them from touching each other; to do this, a number of shallow trays may be provided, and supported on racks one above the other. The larger and finer kinds can be each wrapped in paper. Another plan is to pack the apples, so that they will not touch each other, in dry oats, or sawdust, much as eggs are packed; or put them in layers of dry sand. Bruised apples soon rot and infect those touching them. A dry, cold place in which there is little change of temperature is best. A piece of linen cloth spread over apples will make them less likely to freeze. When kept stored in barrels do not unhead them until they are wanted. It is rarely a good plan to sort over the apples to pick out the rotten ones; leave them undisturbed until used.

Apricots.—These are difficult to keep long. If gathered before they are quite ripe on the shady side, and laid on a sieve in the fruit room or a cool cellar, they will keep perfectly for a few days, but not long.

Cherries.—Fresh cherries will not keep long; they can be dried—see “Dried Fruit.”

Cranberries.—Keep these in the cellar, under water—say in a barrel or keg—and they will keep through the winter. Change the water every 3 or 4 weeks.

The cranberry is nearly related to the bilberry. The species are all natives of cold countries, and grow well on swampy land. The fruit is too acid to be eaten raw, but has a very pleasant taste when cooked. The juice contains malic and citric acid.

Filberts come from a cultivated variety of *Corylus cupulifera*. They constitute a rich but rather indigestible article of food. The best way to keep them is to pack them when quite ripe and dry, in earthen jars, and place a thick layer of salt over them. Tie a paper over them, keep in a cool place and they will keep several months. If they get to look dark or moldy, place them in a colander, and shake gently over a pan of red hot coals on which a little powdered sulphur has been sprinkled; the fumes will soon remove the discoloration and make them fit for the table.

Figs.—These, if not gathered from the tree until they are ripe and tender, will keep in the fruit room for a few days without growing moldy, but no longer; on ice they will keep 2 or 3 weeks.

Grapes.—To keep well, they must not be too ripe; pick off any imperfect grapes from the bunches. On the bottom of a keg put a layer of bran that has been well dried in an oven or in the sun; on the bran put a layer of grapes, with bran between the bunches so that they may not be in contact; proceed in the same way with alternate layers of grapes and bran until the keg is full; then

close it so that no air can enter. Another plan is to take a box and first lay a paper, then a layer of grapes (selecting the best bunches, removing all imperfect ones, and dipping the end of the stems in sealing-wax); then put in another paper, then more grapes, and so on until the box is full; then cover all with several folds of paper or cloth; nail on the lid and set in a cool room where it will not freeze. Use small boxes, so as not to disturb more than will be needed in a few days. Give each bunch plenty of room so that they will not crowd, and do not use newspapers.

Lemons.—(1). Wrap each one in common tissue paper, and lay them on a shelf so that they do not touch each other. The shelf should be in a dry, dark cupboard, free from draughts. (2). Lemons will keep good for months by putting them in a jug of butter-milk, changing the butter-milk about every 3 weeks. When the lemons are required for use, they should be wiped dry with a cloth. (3). Put them in an open jar or basin (not a tight jug) of water, which should be kept cool and changed 2 or 3 times a week, taking care not to bruise the lemons; but in this way they gradually lose flavor. (4). Bed them in layers, in jars, in fine, dry sand, having the sand about 3 inches deep between the layers; pack them stalks down, and do not let them touch each other. Store them in a cool, dry place, and they will keep for months. (5). They may also be kept strung together, or in nets, and hung in a dry, airy place, but they must not touch each other.

Lemon Juice.—It is convenient sometimes to preserve lemon juice. Proceed as follows: Squeeze a number of fine lemons, taking care that they are all quite fresh. Strain the juice through muslin, and pour it into small bottles, and pour just enough olive oil on top to cover it and keep out the air. On opening for use, dip in cotton wool first, to absorb the oil; it will not stay good long after being opened, so use small bottles. Another plan is to put $\frac{1}{2}$ lb. sugar in $\frac{1}{2}$ pint lemon juice; stir them together with a silver spoon till the sugar is quite dissolved. Pour into small bottles, cork well, and tie bladder tightly over the corks.

Lemon belongs to the citrus family, and is native to the north of India. It was unknown to the ancient Greeks and Romans, and was introduced into Europe during the crusades. It is now widely naturalized. Its acidity is due to the presence of citric and malic acid in the juice. It also contains 3 or 4% of gum and sugar, and some albuminous matter, and a little potash and phosphoric acid. Lemons with thick rough skins are almost certain to be dry and spongy, so choose those with thin, smooth skins. Persons of bilious and sanguine temperaments may freely drink the lemonade made from its juice, but those with irritable stomachs should avoid it on account of its acid and therefore irritating qualities.

Melons of all varieties should be kept in a cool, dry room. They should be cut when just ripe.

Oranges should be wrapped in soft paper and laid on shelves or in a drawer. The atmosphere should be cool, dry and even in temperature.

Peaches and Nectarines.—Different varieties of these vary in their keeping qualities. On a cool, airy shelf in the fruit room they should keep 2 weeks or longer; on ice, they will keep 4 to 6 weeks, but must be used as soon as they are taken out—almost before they cool. Nectarines keep rather better than peaches. Wrap each one in paper, and keep like pears.

Pears.—Wrap each one in paper and keep it separate from others. Keep in a dry, even, cool temperature. They do not keep well.

Persimmons.—These may be kept by putting a layer of brown sugar in an earthen jar; then put in a layer of persimmons, then sugar, and so on with alternate layers; have sugar on top. Keep paper closely tied over the top.

Pineapples.—Take ripe pineapples, pare and remove the eyes, and with a silver fork separate the pulp from the core; add 1 lb. granulated sugar to each 2 cups of this pulp and let stand until the sugar dissolves, stirring occasionally; then put it in glass fruit jars, screwing on the covers tightly.

Plums can be kept several weeks if wrapped in thin paper and laid singly on wood. Bruising them hastens decay.

Ripe nuts are best kept in a cellar in a covered earthenware crock. Put them in when freshly gathered, and tie stiff, glazed, brown paper over the cover. *Walnuts* keep well packed in salt in crocks. Walnuts which have become shrivelled should be steeped in milk and water for a few hours—say 6 or 8; this will make them plump and fine, and cause them to peel easily.

THE WALNUT is a native of Persia. In the south of Europe it is quite largely consumed, being there considered wholesome and nutritious. The unripe fruit, when the shell is soft, makes an excellent pickle. By boiling them in syrup a delicate sweetmeat is prepared. The oil pressed from the nut is sometimes used as a substitute for olive oil on the continent, and it is the nut oil used in painting. The matter left after the oil is extracted is nutritious for poultry or cattle. Grated walnuts are used in Spain for tarts and other dishes.

Berries should be kept uncovered, and in a cool, shady place. They will not keep long.

GROCERIES; ETC.

The following suggestions about keeping some of the more important articles in this line will be helpful to many.

Butter should be kept in a cool and airy place—but entirely excluded from the air and in as large a mass as possible. When ice is not obtainable in hot weather, get some saltpetre, dissolve it in cold water, and put a pan of butter in it almost as far as the top; lay a clean cloth over the butter, and let the corners rest in the saltpetre water; keep the jar in a cool, dark place; this will keep it fresh and moist. Another plan, which will keep it cool and hard without ice, is to set a plate of butter under a crock, and cover it with wet cloths as directed for keeping milk without ice. Butter absorbs odors readily, and should never be put in any place which is tainted with odors, from vegetables or anything else, nor should it be left exposed to the air in occupied rooms. It becomes rancid when freely exposed to the air. Leaving butter in water spoils it.

The best way to keep butter from the air is to put it in a crock or tub, and spread common, coarse-grained salt to $\frac{1}{2}$ or $\frac{3}{4}$ inch in depth on top; then cover with a cloth and lay anything flat on top of the crock. The salt by long keeping will turn to brine, which will effectually keep out the air, and may easily be poured off at any time. If kept in a cool, sweet room, however, good butter will keep without the brine.

To keep butter sweet when it seems likely to taint, take some lime water and put the vessel containing the butter into it, leaving it there until the sweetness is restored.

Rancid butter may be sweetened and recovered (1) by washing and kneading it well, first in new milk, and afterwards in cold spring water; butyric acid, on which the rancidity depends, being freely soluble in new milk. (2). Beat the butter in a sufficient quantity of water, in which you put 25 to 30 drops of lime chloride to each pound of butter. After mixing it till all its parts are in contact with the water, it may be left in from 1 to 2 hours; afterwards withdraw, and repeatedly wash in fresh water. (3). Melt the butter and skim as for clarifying; then put into it a piece of bread thoroughly toasted all over. In 1 or 2 minutes the butter will lose its offensive smell and taste. (4). Thoroughly mix 1 teaspoon of soda and 1 tablespoon of salt for each pint of butter; then add equal parts of butter and cold water, set on the stove, and bring all to a boil; then remove, let cool, and take off the butter; it will be sweet, and good for cooking. (5). A little saltpetre worked into butter that has become sour or rancid will render it sweet.—Remember that great care must be taken not to burn butter when trying it out.

A word about rancid butter.—Nobody eats it on bread, but it is sometimes used in cooking, although it really ruins every dish into which it enters. It is injurious, and many cases of dyspepsia can be directly traced to rancid butter. It should never enter into the composition of any dish which appears on the table. Sweeten it or throw it away.

To keep butter hard in hot weather, without ice, invert a large crock of unglazed earthenware over the dish containing the butter (a large, clean flower-pot will answer); the porousness of the earthenware will keep the butter hard if the pot is wrapped in a wet cloth. Another way is, after one meal is served, take a silver-plated butter-dish, clean and wash it, then, when cool, place on it sufficient butter for the next meal; set the dish in a shady, airy place (in a draft if possible); wet a clean towel with cold water, cover the dish tightly with the towel and let it stand until the next meal; the evaporation of the water will cool the butter.

Milk should never be mixed; that is, do not put the evening's milk in with what was left over from the morning; the one will spoil the other. Never use a milk jug or can that is not perfectly clean; the least impurity adhering to the bottom or sides will be sufficient to taint it. In hot weather if much milk is taken in the morning, scald it at once and it will keep good through the day.

Never let milk stand a moment in the sun, and do not let it stand in zinc, copper or brass vessels, nor in earthen vessels lined with lead glazings, as, if it sours at all, the lactic acid will attack these metals and taint the milk. Well tinned, the best glazed, or wooden vessels are unobjectionable if properly cleaned. There can be no question but what the germs of contagious diseases, like scarlet fever, diphtheria, etc., have been transmitted by milk. It is a great absorbent of gases, etc., and should never be left uncovered in any occupied room, like a sitting-room or bedroom.

Adding a little baking soda to milk will keep it from souring rapidly. In souring, the milk sugar turns into lactic acid, which is neutralized by the alkaline soda. The flavor of the soda will not be apparent in milk soups, etc. A little borax added to milk suppresses the incipient lactic fermentation which produces its souring. The little borax thus taken with the milk is harmless, and it will keep the milk unaltered for some time. Milk is so ready a transmitter of disease germs, that inhabitants of cities and towns would do well to scald all they use. Milk can also be canned like fruit; take glass jars, fill them with milk, screw the lids on, and put them in a steamer, which should be set over cold water; then slowly heat it, and for about an hour steam the jars; finally the tops should be tightened again, and the milk will keep for many days. A little calcined magnesia or grated horseradish is sometimes added to milk to retard its souring.

Milk slightly turned may be sweetened and rendered fit for use by stirring in a little soda; the alkali neutralizes the lactic acid. Sour milk can be scalded, which will render it sweet again; the curd and whey will separate, and in bread, the latter is better than shortening.

As salt curdles new milk, it should not be added to milk preparations until the dish is prepared.

To keep milk without ice put it in a tin pail, cover it with a wire gauze; then spread over it several layers of coarse cloth or carpet, which is thoroughly wet with water, and set it in a cool, shady place, where there is a draft if possible; the evaporation from the cloth will cool and keep the milk as well as most refrigerators.

Cream may be kept for 24 hours if scalded without sugar, and by the addition of sugar it will remain good twice as long, if kept in a cool place.

Cheese.—When uncut, this only needs to be kept dry. After being cut, it should be wrapped in a buttered paper and hung in a cloth bag in the air; or wrap it in a linen cloth, and keep it in a box, in a cool, dry place. Cheese, as well as milk and butter, will absorb strong odors, and should be kept away from them. Cheese excluded from the air quickly molds, but it should be thoroughly guarded from flies in a cheese cloth bag of 2 thicknesses.

The mites which attack cheese are so small that they appear to the eye like animated dust. The best way to treat them is to rub them off, and then brush the cheese over with hot lard, and repeat the process at intervals. Mites are not to be confounded with skippers which are the larvæ of a little fly, and which find their way into the interior of cheese, or into parts of cheese, after being cut.

Eggs.—These, unless perfectly fresh, cannot be kept under any circumstances. Store them in a cool place, and avoid changes of temperature. In packing them, always place the small end downwards. Eight parts of bran to 1 of quicklime, makes an elegant packing for eggs in transportation. There are various methods of keeping eggs, the following being the best: (1). Select perfectly fresh eggs, and put a dozen or more at a time into a willow basket; immerse this for 5 seconds in boiling water containing 5 lbs. common brown sugar to each gallon of water. Immediately after, place the eggs on trays to dry. The scalding water causes the formation of a film of albumen next the inner surface of the shell, and the sugar closes all the pores. Pack, when cool, small end down, in an intimate mixture of 1 part finely powdered charcoal to 2 parts of dry bran. Eggs thus stored, have kept perfectly for 6 months. (2). Dip each egg separately in melted paraffine, perfectly covering its surface; then pack as before. (3). Use 2 pints of fresh slacked lime and 1 pint of common salt to each pail of water, and mix well. Fill a barrel half full of this liquid, and eggs put in it after June, will keep for weeks. (4). Pack the eggs, not too close together, in clean, dry sawdust or bran; they will keep for several weeks. (5). Dip the eggs into a solution of

silicate of soda, kept liquid by adding a little tepid water; then dry them, pack down, and they will keep a year or more. (6). Rub the eggs with linseed oil, and place them, small end down, in sand. They will thus keep for months.

The philosophy of keeping eggs consists in the fact, that the shells are porous, and through these little openings or pores, the water inside will evaporate and air enters to take its place. The air which enters thus, carries in bacteria which cause decomposition, and hence, coating the shell with anything which keeps the water in and the air out, prevents decay. The evaporation of the water and entering of the air is what makes a stale egg lighter than a fresh one.

Dried Eggs.—The eggs are beaten to a uniform consistency, and spread out in thin cakes on batter plates; this dries them in a paste, which is to be packed in close cans and sealed. When required for use, the paste can be dissolved in water and beaten to a foam, like fresh eggs. It is said that eggs can be preserved for years in this way, and retain their flavor.

Coffee.—This should be kept from the air in a tightly closing canister. Coffee, like butter and milk, will absorb exhalations from other substances, and thus sometimes acquires a bad flavor. This should be borne in mind in storing it. It is best not to grind it until just before it is used. As the green berry improves with age, and will keep 2 or 3 years, it can be profitably bought by the sack.

Tea.—Exposing tea to the air destroys its flavor, so that it should be kept in tightly closing glass or tin canisters. Tea will yield nearly twice as much strength if it is ground or crushed just before pouring on the hot water, but the pulverized tea sold in the market is apt to be tea sweepings and not good.

Flour and meal of all kinds should be kept in a cool, dry place. Flour will absorb odors, so that it should not be stored near anything odorous, like fish, onions, etc. Keep the temperature even, and neither extremely cold nor warm. Properly kept, it improves with age. It should be sifted and warmed before being used in cold weather. Flour and meal have a tendency to absorb moisture, and when moist, they decompose more readily, and the lower forms of life are apt to develop in them, so keep them dry and well covered.

Meal, sago, macaroni, semolina, and similar substances, are sometimes attacked by mites. They are so small as to be invisible singly, but a peculiar fine powder is to be seen at the top of the farina; there is also a smell something like honey or fermentation. They never appear in a dry storeroom, but are sometimes brought from the grocer's. The only thing to be done when they appear is to burn the infected stock, and heat the jar almost red hot before using it again.

Rice and all seeds should be kept dry, and closely covered to keep them from insects; they should be examined occasionally even then.

Jams and Preserves should be kept as dry as possible. If the outside of the jar feels damp to the touch at any time, be sure the place is a bad one. At once wipe them dry with a cloth, and remove to drier quarters.

Honey.—To keep honey after it is strained from the comb or wax, simmer gently, skim off the whitish foam which rises to the surface, and it will become perfectly clear. Put it in jars, when cool, and cover tightly. The vessel used for boiling should be earthen, or tin. To keep honey in the comb, select combs free from pollen, pack them edgewise in jars or cans, and pour in a sufficient quantity of the boiled and strained honey (as above) to cover the combs; then cover the jars with cloth or leather, and tie tightly. Twenty years' trial proves these recipes to be good.

Honey heated in a can to 200° F., and then closed air tight, will not granulate again while thus sealed up.

Maple Sugar.—To keep this, run the soft sugar into jars, and cover it with that which is just right to cake; it will retain its flavor indefinitely.

Lard, to keep from Molding.—Lard made from intestinal fat will not keep as well as leaf lard. It should be soaked 2 or 3 days in salted water, changed each day. If properly tried, kept in a cool, dry place, and in perfectly clean crocks, it will not be likely to mold. See the recipe for keeping it sweet in the article on curing meats. Fresh lard may be kept in tin vessels.

Suet.—To keep suet, choose that which is firmest and freest from skin and veins; remove all traces of these; then put the suet in the saucepan, at some distance from the fire, and let it melt gradually; when melted, strain into molds, fold in a white paper, put it in a linen bag, and keep it in a cool, dry place. When used,

it must be scraped, and it will make an excellent pie crust with or without butter. Thus prepared, it will keep a year.

Beef Suet can be kept through the year for cooking purposes, if sliced and packed in strong brine, like any salted meat. When needed for cooking, take the needed quantity, rinse off the brine, and try it out in the frying-pan. It also supplies the place of lard or butter, if rendered and put away as lard.

Salt.—The principal thing in keeping salt, is to keep it *dry*—store it in the driest place you have. If it becomes damp in the salt cellars or elsewhere, dry it in the oven and crush it again. Mixing a little corn-starch in the salt used in salt cellars or for the table, will keep it from becoming lumpy; use about 1 part corn-starch to 5 parts salt.

Spices.—These are best kept in small, tightly closing tin boxes or glass bottles, with a clear label on each one, so that it can be selected without loss of time.

Soap.—If hard soap is bought in quantities, and kept till it hardens well, it will waste less in using.

Cider, to Keep Sweet.—Use only sound apples. Make the cider when the weather is almost cold enough to freeze the apples. Expose the cider during freezing weather, and stir it till the whole is reduced as near the freezing point as possible without freezing. Then barrel it, bung up tight, and place in a cellar kept nearly down to the freezing point. As long as kept cold enough, it will not ferment, and as long as it will not ferment, it will not sour.

Vinegar, if bought by the keg, should be kept in the cellar, in a cool place. A little can be kept in the kitchen, in a tightly corked jug, from which to fill cruets. Keep vinegar in wood, glass or earthen vessels, as its acid will act on brass, copper or glazed ware, producing a poisonous compound.

Yeast.—Keep this stored in glass or wooden vessels. Ordinary beer yeast may be kept fresh and fit for use for several months, by placing it in a close canvass bag, and gently squeezing out the moisture in a screw press, the remaining matter becomes as stiff as clay, and must be kept in close vessels.

Food of all kinds will keep longer if cooled quickly; the quicker it cools, the longer it keeps. Remember this especially of bread and soups. Before putting bread or cake into a jar or box, see that they are fully cooled, otherwise the steam will cause them to mold. Any cooked food placed in a cellar or refrigerator without being quite cool, will absorb a disagreeable odor from the confined air.

Bread or cake should be kept in a closely covered stone jar or tin box. If you have any crusts or pieces of stale bread, do not throw them away, but dry them in a moderate oven; they can then be rolled on a board into crumbs, and they will be useful for anything that is breaded, like cutlets, croquettes, etc. Waste nothing. Stale cake may be worked into puddings, while pieces of stale bread can also be utilized for puddings, or for toast, dressing for meat, etc. Save all soups and gravy also, as a little of either will add to many dishes.

Exposing to Sunlight.—Never let milk, cream, butter, salad oil, or any food containing it, stand for a single moment where the rays of the sun will strike it. Oils and fats of every kind should be kept from the air and sunlight as much as possible. The chemical action of the sun's rays, and even long exposure to light, gives to fats a sun-burned taste, which is expressed by an old provincialism as "bingy." You can easily know this taste by leaving a bit of bread and butter lying in the sun for a while and then eating it, or rather trying to eat it, for you will not eat much.

When food comes from the market, it should receive proper care, which is not always given it. Meat, milk, cream, butter, and in fact all foods attract in a greater or lesser degree, any impure odors near which they may be placed. The whole contents of a large refrigerator may be ruined by a bit of putrid meat, which has been overlooked by a careless servant. The refrigerator, larder, cellar, cupboards and closets where food is stored, whether cooked or uncooked, should be inspected at least once a day by the housekeeper, to see that nothing is spoiling. Unless this is done, especially in hot weather, there is danger that illness may result from eating fermenting food, or that more food material may be wasted than is placed on the table.

SOUPS.

Soups are of 2 kinds; the heavy, rich soups, made from stock prepared the day before, with the addition of other ingredients on the day of serving, and plain soups, made entirely in the morning before dinner. These latter will, no doubt, be more useful for ordinary occasions, being lighter, and quite as palatable, and they certainly are more economical than those made from stock.

Soups are made by cooking meat, fish or vegetables in water or milk, and they are seasoned with a great variety of flavorings. If you see a recipe calling for a great variety of ingredients, many of which you do not have, you will find that you can often use what ingredients you do have and still produce a very good soup, as many of the ingredients can be omitted without much loss—it will simply change the flavor a little. Remember that the 2 important points with soups are, (1) their nutritive properties, which are extracted from the meat, fish, etc., and (2) the flavoring derived from herbs, spices, etc., added for that purpose. Some soups will contain a good deal of nourishment and others very little; some will be very highly and others only slightly flavored. The names are often given to soups because of their principal ingredients, as with "Beef," "Chicken," "Potato," or "Cabbage Soup," and sometimes because of the color, as "White," or "Brown Soup," while often they are purely fanciful. By bearing these things in mind, and by studying the principles involved in extracting the nutritive properties from the fish or meat, the inexperienced cook can soon master the mysteries of soup making, and she can then easily make new and appetizing combinations for herself.

The Utensils Used.—The soup-kettle or stock-pot for an ordinary family should hold from 6 quarts to 2 gallons. The allowance of soup for each person is a half pint, and unless the family is very large, a kettle of this size will give ample room for a full supply, after straining from the soup material. The best kettle is of iron, and if kept scrupulously clean (as all cooking utensils should be) it will not discolor the soup. If anything should happen to turn color in it, there is nothing harmful in the oxide of iron, whereas, some articles of food are made poisonous if prepared in brass, copper, or lead, especially acid foods, if allowed to stand in those vessels. The soup-kettle should be high in proportion to the size, as only a small surface in contact with the hot range is needed for the long, slow simmering required in the preparation of soups. A kettle of that form takes less room on the range, and when dinner is being prepared, this is desirable. Other utensils used in the preparation of soups are, 1 coarse and 1 fine colander, and 2 or 3 squares of cheese-cloth for strainers. The *cloth strainer* should be boiled in water with a little cooking-soda added. If boiled in soap, the odor is apt to remain in the cloth, giving a bad flavor to the soup.

The Principles Involved in Soup Making.—Many cooks have little idea of the principles involved in extracting the nutritive properties from meat, but they are quite simple, and are as follows:* Fibre, fat, gelatine and albumen, with extractives and salts (to which some writers give the name of *osmazome*) are the component parts of all meats. *Fibres* swell up and soften when subjected to the action of hot water. They are a valuable and nourishing food, but are insoluble in water, and constitute nearly all that remains of meat after long boiling. *Fat* is dissolved by boiling, but as it is contained in cells covered by a very fine membrane which never dissolves, a portion of it always adheres to the fibres. The other portion rises to the surface of the stock, and is that which has escaped

*Count Rumford, writing of his experiments in feeding the Bavarian army, says: "I constantly found that the richness or quality of a soup depended more upon the proper choice of the ingredients, and the proper management of the fire in the combination of these ingredients, than upon the quantity of solid nutritious matter employed; much more upon the art and skill of the cook than upon the sums laid out in the market." To which we may add, that the poor suffer more from the common lack of skill than the rich, because they are least able to bear the losses it entails, and therefore we say, that to no class is a clear understanding of the principles of cookery so important as to the poor.

from the cells which were not whole, or which have burst by boiling. Fat is also added to thickened soups, where it combines with starch and does not rise to the surface. The *gelatine* is soluble in water, and is the basis and nutritious portion of soup stock. It is the *gelatine* which, when enough of it is present, causes the stock to become a jelly when cold. *Albumen* surrounds the fibres of meat in its soluble state, just as it exists in an unboiled egg. It is soluble in cold or tepid water, but it begins to coagulate at 145° and sets into a jelly at 160°, for which reason it is evident that if the water is boiling when the meat is put in, or if it is afterwards made to boil up quickly, the albumen will harden, and will form a thin case or shell which will prevent the *gelatine* and *osmazome* from dissolving, and the result will be a thin and tasteless stock. Albumen partially dissolved, makes the cloudy appearance of soup and jelly; coagulated albumen is removed as scum. Scum is wasted food. It is well also to know that the size of the piece of meat affects the solubility of the albumen, as the part farthest from the surface will receive enough heat to be coagulated before it is dissolved, if the piece is large. The *extractives and salts* (*osmazome*) are soluble in water, cold or hot, and they give flavor and perfume to the stock. The flesh of old animals contains more than that of young ones, and brown meats contain more than white, and make the stock more fragrant. By roasting meat, a portion is converted to caramel; therefore, by putting the remains of roast meats in the stock-pot a better flavor is obtained. Choose lean rather than fat meat for soup. See also what we say elsewhere about the principles involved in cooking meats.

Bones are composed of *gelatine*, a fatty fluid something like marrow, and an earthy substance, to which they owe their solidity. As much *gelatine* is contained in 2 oz. of bone as in 1 lb. of meat, but it is so encased in the earthy substance, that usually only the surface is dissolved in boiling water; when the bones are broken, there are more surfaces, and more *gelatine* is dissolved; and by reducing the bones to powder, all the *gelatine* can be obtained. Long continued boiling is, therefore, needed for bones, and this boiling should continue until the earthy matter is full of little empty holes where the *gelatine* once was, and until the bone has lost $\frac{2}{3}$ of its weight. They should boil for days rather than hours. The best way to break bones is to pound them roughly in an iron mortar, adding a little water from time to time to prevent their heating. It is a great saving to thus utilize bones which are often entirely wasted. If the bones are finely broken, tie them up in a bag and put them in the stock-pot. Now *gelatine* forms the basis of stocks, but although nourishing, it is without taste, and so stock made entirely of it, is not liked. Flavoring and salts are needed to make it palatable, and when meat and vegetables are added to the cooking bones, they make the stock savory.

Stock.—When meat is used solely to make stock, cut it into very small pieces, put it into cold water, and heat very slowly; but if you wish to have stock and a piece of savory meat also, choose the freshest meat, and have it cut as thick as possible, for if it is a thin, flat piece, it will not look well, and will be soon spoiled by the boiling. It is impossible, however, to have *first rate* stock and *good* boiled meat at the same time, as the two objects are diametrically opposed. As it extracts all the juices from the surface of meat to wash it, that should never be done unless it is absolutely necessary. Add cold water, and put the stock-pot on a gentle fire and heat it gradually. The albumen will dissolve if it is never heated above 160°, and will not coagulate, but as, in this state, it is much lighter than water, it will rise to the surface, and this is what makes the scum. The rising of the hardened albumen (*scum*) has the same effect in clarifying stock as the white of eggs (which is albumen) and, as a rule, it may be said, that the more scum there is, the clearer the stock will be. If you want clear stock, remove the scum when it rises thickly. Do not let the stock boil fast, because then part of the scum will be dissolved and another part will go to the bottom, thus making it difficult to obtain a clear broth. Always try to have the fire very regular, as then it will not be necessary to add cold water in order to make the scum rise; but if the fire is too warm at first, that will be necessary. If fried onions are added to stock, tie them in a little bag, as they may cloud it without this precaution. Generally speaking, the longer the stock simmers, the better it will be.

Removing Fat.—The English and Americans prefer soup with the fat removed; it has become the *fashion* and the fat is thought to look badly, but the

fat is food, and quite nutritious. The common people on the continent prefer their soup covered with "eyes" (fat). The scum is coagulated albumen, and if clean meat was used, the scum will not be objectionable; it is certainly nutritious, and to throw it away is clear waste. Its presence is not noticeable in thickened soups as it is mingled in and hidden by the other ingredients. Those who want clear soups can easily make them, but it is well to understand that they are less nutritious than others. In invalid cookery the fat is removed because the stomach is then weak, and often not able to digest it, but with healthy people the case is different.

When it is desired to remove the fat, soup can be allowed to stand until next day, and it can then all be taken off; then the soup can be re-warmed. Or any surplus fat on the surface of soup may be removed (after skimming off as much as possible with a spoon) by drawing a piece of blotting paper across it, which will remove all the remaining fat. Or to take fat from soups, sauces, etc., thoroughly wet a cloth with cold water and pour the stock through it; the coldness of the cloth will coagulate the fat, which will collect on the cloth; repeat if necessary; if any particles of fat remain, take them off with blotting paper as above. The fat on the cloth can be removed and clarified, and is good for many purposes.

Flavorings.—Add vegetables used for flavoring about an hour before serving soup; that is, do not add them until the juices are nearly extracted from the meat. Wash and pare the vegetables, cut them into small pieces, and keep them in cold water until ready to add them to the soup. They can be first blanched or par-boiled if very strong or old. If desired, a part or all of the vegetables can be fried before being added to the soup; potatoes, cabbages and onions are better for being boiled in separate water before being added. Parsley, summer savory and celery are also often used; onions and garlic we speak of in the next paragraph. Some cooks occasionally use cloves, bay leaf, nutmeg, etc. For a variety, try a little caraway seed in potato soup. Just before serving, add the salt and pepper. The flavoring of all food is an important matter and should never be slighted. For soups and stews the best rule is to combine several flavors without having any one of them too prominent. As boiling spoils the flavor of wines and catsups, if they are added, it should not be until just before serving. Unless the soup is to be thick, no flavor should be added, but if some of the meat and vegetables used are fried, it will improve the color and flavor, but be sure nothing, either meat or vegetable, is added, which will have the taste of being smoked or burnt. Great richness may often be given to soups by the addition of fried cucumbers. Cut off celery leaves, dry them, and put them in a tin can, and you will have them the year round to flavor soups.

Using Onions.—Onions, garlic and shallot are disliked by so many people, that, in making stock, or any of the quickly made soups, it is better to leave them out; but as many people consider soup flavorless without those vegetables, a dish of stewed onions, garlic or shallot may be cooked separately, and on serving it, a little can be added to the soup given to those who like such flavors. In this way, soup either with or without onions can be served from the same tureen.

Onion juice for flavoring can easily be obtained by peeling and mincing an onion and squeezing it in an ordinary lemon squeezer, or cheese-cloth. The odor can be removed from the squeezer and knife by washing them in cold water.

GARLIC is an eastern plant which has been cultivated from ancient times. It belongs to the same family as the onion, and possesses its properties in an intensified degree. It is much used in Italian, Spanish and French cookery, but very little in English and American. It is very wholesome, assists digestion, and acts as a slight stimulant and tonic. It possesses much medicinal value. As a rule, in using garlic, it is not chopped, but the flavor is imparted simply by rubbing; cut a little off of the end of the garlic, and rub it on the dish in which the food to be flavored is placed.

THE CHIVE is a plant belonging to the same family as the leek and onion, being the smallest of the onion tribe. Its properties are similar to the onion, and it is used like that in soups, sauces, salads, etc., but it is much stronger, and only about $\frac{1}{2}$ as much is needed.

THE LEEK belongs to the same order as the shallot, garlic and onion. It possesses similar properties to the onion. It is very succulent and wholesome, but to prevent tainting the breath it should be well boiled.

THE SHALLOT, SHALOT or ESCHALOT, is a native of Palestine. It was introduced into Europe by the Crusaders. It belongs to the same family as the common onion, but its flavor is stronger, and it does not leave an unpleasant odor behind. The leaves of the plant may be cut while growing, and used like young onions. It is used for high flavored soups

and gravies, and is excellent when pickled. *Shallot vinegar* is used for flavoring soups, sauces, hashies, etc.

ROCAMBOLE is often called *Spanish Shallot*, and belongs to the order *Liliacæ*. It is very similar to garlic, but is milder.

THE SORREL (*Rumex Acetosa*) is a hardy perennial, which grows in Europe, Asiatic Russia and North America. It grows in any good garden soil, and when fully grown, the leaves are gathered singly, and they are used to flavor soups, salads and sauces. Sorrel was known to the Romans, who sometimes stewed it with mustard, and seasoned it with a little oil and vinegar. It is not much used in English and American cookery, but is used considerably in France. Its acid, which is very pronounced, is a combination of oxalic acid with potash, called by chemists, *binoxalate of potash*.

Broth can be changed and often improved in flavor by using 2 or 3 kinds of meat at the same time; for example, with beef a little liver can be added, or with veal a piece of ham.

For seasoning, salt, whole and ground pepper, both black and white, cayenne, allspice, ginger, cloves, mace and cinnamon should be ready. Whole pepper is always used for white soups, as ground pepper makes them look dusty. As herbs and spices are more easily removed from soup, by straining, when whole than when ground, it is better to use them whole.

Be chary of seasoning and spices. A little of these things will go a long way. But a very little sugar judiciously added will often be found to greatly improve the flavor. Never indulge over freely in onion or shallot in soups. The condiments should not be added until just before the simmering is completed, in any soup, as they will harden the meat etc., with which they come in contact.

If too much salt is added by mistake, its taste may be modified by adding 2 or 3 teaspoons of vinegar; its acid will partially neutralize the alkaline salt; then add a little sugar to mask the taste of the vinegar.

Altering Recipes.—In order to be sure of the result, care should be taken in measuring all the ingredients, to use the exact quantities called for in a recipe, but if *all* the ingredients are changed in the same *proportion* (as, for example, using twice as much, or $\frac{1}{2}$ or $\frac{3}{4}$ as much of each one) the result will not be affected. It should be said, however, that except in those cases like the cooking of meat and vegetables, the baking of bread, etc., where *definite chemical laws apply* (which cannot be violated without loss) the rules of cooking are not absolute and unchangeable. The large class of materials combined for producing flavors (as in soups, etc.) can be varied indefinitely, according to convenience and the materials at hand. Whenever you get hold of a recipe calling for numerous articles for flavoring, some of which you do not have, you can often use the recipe, putting in the flavorings you *do* have, or substituting others for those you lack, and still produce a very good dish, although it will of course be a new one—or, if not judiciously done, it may *not* be so good! Those who have mastered the principles of cookery and acquired a little experience can devise many new and excellent recipes.

No further general directions will be needed for making soups, as special directions accompany each recipe. The experienced cook can vary the rules according to the tastes of her family, while the novice in cookery will find the best results by adhering strictly to the recipes as given, as they have been tested and found good.

STOCK FOR SOUP.

All meat and bones, scraps and trimmings, used in making stock, or plain soup, must be perfectly fresh, for the least taint in the meat is sure to spoil stock or soup. Soft water is also required, as this extracts the juices from the meat, and gelatine from the bones, much better than hard water. The proportion of meat and water for stock is about 1 pound of meat, bones and trimmings for 2 quarts of water. The slow boiling does not much reduce the quantity, but a little boiling water may be added from time to time if any appreciable quantity has evaporated. When the meat separates from the bones, it can be taken out and used in making various side dishes found under the head of "Meats"—the bones remaining longer for the extraction of gelatine.

Mutton, lamb and pork are not good for stock, as the flavor of the former is unpleasant when re-cooked, and pork is too oily to use in this way, although many cooks do use ham bones in soups. Beef makes the best stock, as the flesh of mature animals contains more osmazome; an old fowl is a great addition to stock. Veal alone makes a fine white stock, but not so savory. Bones ought always to

form a component part in the soup-kettle when making stock, and they should be finely broken, in order to extract all the gelatine.

Watch the stock-pot until it is ready to boil, then carefully take off all the scum as fast as it rises. When thoroughly skimmed, set back on the range where it will just simmer—do not boil rapidly as this hardens the albumen. It may be kept simmering on a gas, or kerosene stove, if fire is not needed for other purposes. Stock while cooking should not be tightly covered. A sieve should be placed over the kettle to keep out flies, but close covering prevents the stock from being clear. The vegetables used in making stock, are turnips, carrots, onions or garlic and celery. The meat should slowly cook 4 or 5 hours, and the vegetables the last hour, as vegetables should only be added in time to become thoroughly done when used in any soup; then strain it through the cloth strainer (called by foreign cooks a "tammy") into a tin pail, or deep tin pan, as it cools more quickly in tin than in any other vessel. The pail or pan must be entirely tinned, for if the tin is off the vessel, the stock may be discolored by standing in contact with iron;—the salt in the soup will attack the iron, and cause rust. While boiling, the salt does not attack the kettle unless it is new and rough, because, after using a smooth kettle for a while, the pores of the iron become filled with the fat of the meats cooked in it. Place the tin containing the stock in an airy place, in the shade, where it will cool as quickly as possible, and cover it with a sieve to keep out the flies. When it is cooled, place it uncovered in the ice chest for the fat to rise. The stock should be a firm jelly and will keep for a week in the ice-chest. The next day after making it, the fat can all be removed from the top of the stock, and used in cooking vegetables. Wipe the top of the stock with a dry cloth, and then with a little cloth wet with extract of cloves to prevent its molding.

For ordinary cooking, especially in hot weather, it is better to make stock one day, for the soup of the following day, rather than take the risk of having it mold or sour. Remember that it must be cooled as quickly as possible without other covering than a sieve, which facilitates the escape of steam, and consequently the cooling of the stock, and at the same time keeps out the flies. If tightly covered, and the stock is a long time in cooling, it will ferment and sour, when it becomes poisonous. If only beginning to turn, it is said that it may be restored by tying some charcoal in a bag, putting it in the stock, and then boiling it.

STOCK No. 1.

2 lbs. shin of beef well broken.	3 carrots.	1 teaspoon of broken white pepper.
2 lbs. knuckle of veal.	1 turnip.	1 teaspoon of sugar caramel.
1 gallon cold water.	1 head of celery.	1 blade of mace, or a little nutmeg.
1 large onion.	4 whole cloves.	1 soup bunch; salt.

STOCK No. 2.

1 old fowl.	2 onions.	Salt and pepper.
4 lbs. veal bones well broken.	2 carrots.	Cloves and herbs.
1 gallon of cold water.	1 turnip.	

STOCK No. 3.

4 lbs. beef shin-bones, broken.	3 large onions.	Salt and pepper.
1 chicken.	3 large carrots.	Cloves and herbs.
1 gallon cold water.	1 turnip.	

VEAL OR WHITE STOCK.

Wipe 4 lbs. knuckle of veal, break the bones, put it into 1 gallon of cold water, heat slowly, and simmer 4 hours, skimming well; then add 1 stalk celery, 1 onion, 1 bay leaf and 1 tablespoon salt, and simmer 1 hour longer. It should jelly when cold, and the fat can easily be taken off. It can be melted for use and strained through cheese-cloth, or flannel, or clarified with egg if necessary and it is wanted very clear.

FISH STOCK.

Never throw away the water in which fish has been boiled; it is valuable for making fish sauce, and also cheap fish soups—(*soup maigre*). Therefore, in boiling fish, or any meats whatever, when the broth is, or may be wanted for stock, be careful about putting in too much salt. Salt in quantity is not needed

for boiling fish—only a little to harden it, and the sauce served with it can contain more if liked. Many kinds of fish, after boiling in just sufficient water to cover them, will leave the broth a hard jelly when it is cold. This of course contains nourishment, and the next day can be utilized for a fine soup, by adding the bones and remnants of the boiled fish with additional seasoning and vegetables.

Stock, to Clear or Clarify.—For each quart of jellied stock, the whites of 2 eggs are required; melt the stock and let it get steaming hot, but not boiling; heat the whites of 2 eggs with the shells which have been washed and well crushed, and stir into the hot stock, then let it come to the boiling point; set it back on the range and simmer 15 minutes; strain through a flannel bag; keep returning it through the bag until it runs through bright and clear. In cold weather this operation must be near the fire to keep the jelly from *setting*. The bag must be made of fine, thin, new flannel, and well scalded in hot water containing a teaspoon of borax, or cooking soda. Never use soap in cleaning the bag, or other strainers used in making soups or gravies, as the odor of the soap will affect the flavor of the soups. Clearing stock extracts the flavor and nutrition, and is not necessary for every-day soups, besides being too expensive, as well as consuming too much time. The every-day soup only needs straining and the removal of superfluous fat.

To Clarify Soup, when desired, beat the white of an egg with a small cup of cold water and add to the soup; simmer for 10 minutes, and then strain through the "tammy," or cloth-strainer.

Hints.—Even very weak stock is much better than water to use for soups and gravies, vegetable stock being better than none. White stock is made of veal, and of bones which have been boiled once or contain only gelatine. The best stock is obtained from the freshest meat.

Soup meat if not boiled too long, can, after cooling, be finely chopped, seasoned to taste, and heated again with a piece of butter. If not moist enough, 1 or 2 spoonfuls from the soup-kettle may be added. This will make a delicious side dish, or nice breakfast dish the next morning.

If a good soup is served (which can be made of the cheapest cuts of meat) with bread, it is almost a meal in itself. Then the meat can be served as *bouilli*, or minced and made delicious by judicious seasoning and flavoring—it is much less expensive than the heavy and costly large joints. French cookery is proverbially inexpensive, and it is equally renowned for its delicacy. In France just this rule of cookery is most often followed. But it should be remembered that the French do not cook the soup until *all* the osmazome and nutrients are extracted from the meat. If cooked until all the nutrients are extracted from the fibres, they will be of little value, as needed fibre can be obtained more cheaply in other ways, than to attempt to make them palatable by adding the other ingredients necessary.

Coloring for Soups.—The favorite coloring for soups is caramel, or scorched sugar (*not burned*). This not only gives the soup a fine, amber color, but also imparts a pleasant flavor to the soup. Onions fried a dark brown, will, in addition to caramel, give a brown color. Many cooks fry a few slices of the soup-meat a dark brown, before the simmering process with water is begun. Pounded spinach, and puree of young green peas, color soups green. Saffron—only a very little is needed—will give soups a fine golden color, and tomatoes, lobster coral, well pounded, and cochineal, will give a red color to soups. Pot-marigold, leaves, stems and flowers, are used by the French to color and flavor soups. (This is the *Calendula Officinalis*, Order *Compositæ*.) Vegetables sliced thin and fried in a very little butter till nicely browned, and then put into the soup kettle, will impart an amber color.

Lobster Butter.—Take lobster coral (not the little red eggs that cling to the outside of the lobster, but the red lumps inside when it is cut open down to the tail); wash it carefully, removing every morsel of the flesh or green part, as that may turn it after it is made. Add a little butter and pound it in a mortar—the less butter used the better, but it must be pounded until perfectly smooth and free from grit; then add a little cayenne pepper and nutmeg, which will preserve it. About half fill jelly glasses with it, set it in the oven till thoroughly hot, press it down, pour on a little melted paraffine or clarified butter, and tie on paper

dipped in egg. It can be used to color soups, etc., and will keep a long time. Coral from crayfish can be used instead equally well.

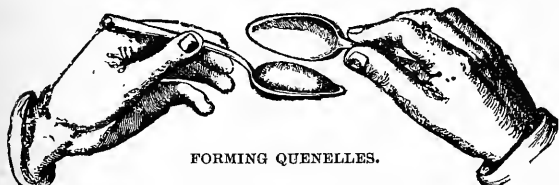
ADDITIONS TO SOUPS.

Quenelles or *Force-Meat*, *CROUTONS* and *Nudels* or *Noodles* are additions to soup used by foreign cooks. Curry-powder and various sauces are also used for flavoring rich soups for banquets and dinners of ceremony, and can be used, if liked, in the preparation of side dishes made from soup-meat, in warming the remains of boiled and roasted meat.

CROUTONS (pronounced Kru'-tons).—These are bits of bread cut in small diamonds, squares, cubes, or in fanciful shapes. They are fried brown in butter, and used in soups and as a garnish for side dishes and *entrees* of meat.

FORCEMEAT or *Quenelles* (pronounced Kee'-nells).—This is made of equal parts of bread-crumbs, beef-suet, and any kind of raw meat excepting mutton, lamb, or pork. Poultry and game make excellent force-meat, but veal is most commonly used. The suet and meat must first be cut finely, then chopped, and lastly pounded to a paste in a mortar, with a little salt, pepper and any pulverized herbs, if liked.

To 1 pound of meat and 1 of suet, allow 4 eggs. Beat the eggs thoroughly and mix with the paste, and work through a wire sieve or fine colander to take out any fibres that may remain in the meat. To the strained mixture add the bread-crumbs which have been previously dried, pulverized and sifted; then take up the mixture in a teaspoon, and with another teaspoon form and smooth



FORMING QUENELLES.

the quenelles in shape like a small egg; they are then dropped in boiling water for 10 minutes to poach. When a soup is to be served with them, place them in the tureen, and pour the hot soup over them. Another way

to prepare forcemeat balls is to shape the above mixture into balls the size of marbles, and fry in boiling fat until a light brown.

Suet Dumplings for Soup.—Take 3 cups sifted flour, sift in 3 teaspoons baking powder, and then rub in well 1 cup of finely chopped suet; add 1 teaspoon of salt, and enough sweet milk to make as stiff as biscuit dough; then form it into balls about the size of oranges, flour them well, and $\frac{3}{4}$ hour before serving the soup, put them in it; the cover should not be taken off, and to make them nice they should boil steadily until ready to serve. They make a kind of pot-pie.

Noodles or Nudels.—To 1 egg add a little salt, and flour to make a stiff paste. Roll out as thin as a wafer, then roll up as you would jelly-cake. Slice off the end in fine strings, shake out loosely and cook in the soup for 10 minutes before taking it up; or the dough may be rolled out a little thicker than pie-crust, and cut in rounds with a tiny biscuit cutter; or it may be divided in 2, then 4, then 8 parts, and so on until the pieces are the size of a gooseberry when rolled in the hand. Roll, and boil them in the soup for 15 minutes before taking it up. The German *nudels* are made much the same as this, but they use no salt, as that they think makes them sticky when cooked.

Soup-bunch.—This is a bunch of young onions or leeks, carrots, and various herbs to be found in the market in most large places, such as green sage, thyme, marjoram, etc.; celery-tops are sometimes included. The onions, carrots and other vegetables can be cut in pieces for the soup, but the herbs are best folded in thin muslin and taken out after 10 minutes' simmering in the soup.

Soup-Bouquet.—A bouquet of herbs for flavoring soups and sauces is much used by foreign cooks, and is made of a few sprigs of parsley, thyme, celery leaves, 1 or 2 leaves of sage and a bay leaf. This may be folded in a small square of tarlatan or other thin cloth, and wound with a thread. This can be put in the soup for a little time, and all removed without trouble when the soup is served.

Thickening for Soup.—Clear soup may be thickened with a little corn-starch, and still preserve its transparency. For brown soups, browned flour is much better than the raw for thickening. Put into a small sauce-pan $\frac{1}{2}$ lb. of butter,

and when hot, stir into it 2 cups of flour. Stir this over the fire till it is a pale brown, taking care that it does not burn. One large tablespoon thickens a quart of soup.

Flour, arrowroot, bread-crumbs, sago, rice, oatmeal, barley, macaroni and vermicelli are all put into soup to thicken it. They all have this in common, that the soup must actually boil to burst the starch granules after they are added. Floury substances must be mixed smooth with a little cold water, milk or broth, before being added to the bulk of the broth. Eggs, when added, should be beaten, mixed with a little of the warm liquid, strained into the soup, and not afterwards allowed to boil, lest they harden in tiny lumps, or what is popularly called "curdle." The yolk is better to use than the white. "Body" may be given to soup by adding a little cold potato, grated, and mashed potato is sometimes added, mixed smooth with a little milk. Flour can be cooked in a little butter and then added, which is probably better than first mixing it in cold water as above. Barley, when added, should be soaked over night, and then stirred in an hour before the soup is done. With rice, use 1 tablespoon to 1 quart of soup, and add it about 30 minutes before it is done. Farina can be sprinkled in a short time before serving, allowing it to boil a little while.

Caramel for Soup.—Put a teaspoon of sugar in a frying-pan and place on the stove; let it dissolve and brown, but not burn. When it has turned a bright golden color and begins to smoke, add water enough to cover the bottom of the pan; let it boil up and dissolve the caramel; then pour into the soup for coloring and flavor. This is not to be used in any white soup. If you have prepared caramel on hand, use that. See our recipe given elsewhere for preparing it.

Browned Crackers.—These are a fine addition to soups, and are good for invalids with tea or coffee. The crackers are first split and a little butter spread on the halves; they are then placed on a baking tin, with the split and buttered side up; set them in a hot oven, on the top shelf, and they are done when of a delicate yellowish brown. They need watching very closely, to prevent scorching. They are delicious with soups, fish chowder and oyster stews.

Egg-Balls for Soup.—Powder some hard-boiled yolks of egg, and add sufficient raw yolk to make the mixture into a paste that can be rolled; add some pepper, salt, a little finely-chopped parsley, and a "suspicion" of nutmeg; roll into balls the size of marbles. Dip the balls into flour and throw them into boiling water till they are set; then drain them and throw them into the soup before serving. They can also be used to garnish entrees.

Virginia Flavoring.—Take thyme, mint, sweet marjoram, and rosemary gathered in full perfection; pick from the stalks, put them in a large jar, pour on strong vinegar, and let stand 24 hours; then take out the herbs, throw in fresh bunches, and do this 3 times; then strain the liquor, put it in bottles, cork and seal tight. Do not let the herbs stay in more than 24 hours at one time, else a bitter, unsavory taste may be imparted. What is wanted, is just the delicate first flavor which comes from steeping the herbs in the liquid. It makes a delicious flavor for soups and sauces.

VEGETABLE SOUPS.

Almond Soup.—Blanch and pound finely 1 pound of sweet almonds, and the hard boiled yolks of 4 eggs; beat these well together, and add to a gallon of hot stock; let it come to boiling and stir constantly; thicken with bits of butter rolled in flour, and just before serving, add salt to taste, and a coffee cup of rich cream. Have the whites of the eggs cut in small pieces in the tureen, pour over it the hot soup and serve.

Asparagus Soup.—Break off all that is tender from a bundle of fresh, green asparagus, and put this in a large pan, with a large handful of freshly gathered spinach, 1 of parsley, and the same of spring onions. Wash in 2 waters and drain in a sieve; then boil in 2 quarts of water, with a bit of butter and a little salt. As soon as the asparagus is done, rub all through a fine colander and return to

the pot; then add a piece of butter the size of a small egg (cut in bits and rolled in flour), a teaspoon of sugar, and a sprinkle of white pepper. Serve hot with croutons.

Barley Soup.—Scald 10 tablespoons of pearled barley; drain, cover with fresh boiling water, and boil 3 hours. Scald a quart of rich, sweet milk and add to the barley when done. Season with salt and pepper to taste. Beat the yolks of 10 eggs to a foam and put in the soup-tureen; pour over the barley soup and serve.

Bean Soup.—Soak 1 cup of white beans over night; in the morning boil until quite tender; then rub through a colander, and add 3 pints of water and 1 quart of rich milk, 2 tablespoons of butter, 3 large potatoes chopped fine; season with finely cut parsley, pepper and salt to taste. Simmer about $\frac{1}{2}$ hour, and serve hot.

Lima Bean Soup.—Put a quart of dried Lima beans in a saucepan; cover with boiling water and boil slowly 1 hour; drain and pass through a colander. Scald a pint of milk and add to the beans. Soak a pint of dried Lima beans over night; turn off the water in the morning, and put on the fire to boil slowly for 2 hours, with 3 pints of water; then rub through a colander. Put in the kettle again and add a pint of milk or cream, and thicken with a lump of butter rolled in flour. When it boils, add the beaten yolks of 2 eggs. Season with pepper and salt, and serve with a roll at each plate.

Bean Porridge.—Soak over night a quart of any kind of good beans, such as are used for baking; boil them the next morning in plenty of water, until they begin to break in pieces; then drain, and add them to any good broth of fresh or salted meat, with a few slices of salt pork cut in dice. Cook and stir them often, until they are all broken fine. This is a most nutritious soup to keep constantly on hand in winter, when milk is scarce; it is inexpensive, for the broth of all salted meats and "boiled dinners" can be used in preparing it. It is more easily digested than baked beans, being less concentrated food. Of this soup it was said in "olden times:"

"Bean porridge hot, bean porridge cold,
Bean porridge is the best when nine days old."

Cabbage Soup.—Cut a small cabbage in quarters; carefully take apart and wash; then chop finely. About $\frac{1}{2}$ hour before dinner, add it to 2 quarts of stock, or broth, in which meat has been boiled; let it boil until dinner time, when the cabbage will be done. Serve with toasted bread.

Carrot Soup (*a la Cressy*).—Put a piece of butter the size of an egg into the frying-pan, and when melted, add 1 large onion cut finely, a slice of ham cut in little squares, a teacup of chopped celery and 10 grated carrots. Stew over the fire until the vegetables begin to brown, then add 2 quarts of stock, and simmer for 2 hours. Rub all through the coarse colander, put back into the kettle to re-heat, and season with pepper and salt. Serve with a few dice of toasted bread in the tureen. This is good made with 3 pints of water, adding a pint of milk or cream when it is re-heated.

Celery Soup.—Break apart, and carefully clean 2 bunches of celery; then cut it finely and boil in just water enough to cover it, until it is sufficiently cooked and soft enough to rub through a coarse colander; scald 3 pints of milk and add to the celery, and the water in which it was boiled, with half a small onion cut finely if liked; then rub together a tablespoon each of butter and flour and stir it in the boiling soup, season with salt and pepper to taste, and serve with strips of toasted bread without butter, or with browned crackers.

Celery Cream Soup.—Take 3 lbs. veal, and let it simmer slowly in 2 quarts of water till reduced one-half; when cold it will make a jelly-like white stock. Take some celery, cut the best parts small, and cook it until tender in this stock; now put it through a colander first, and then through a coarse sieve, and it will make a kind of paste; return this to the saucepan, add 2 pints of cream, season with pepper and salt, and let it simmer 10 minutes, stirring it often. It is excellent.

Green Corn Soup.—Grate sweet-corn from 6 ears, and boil the cobs in sufficient water to cover them; remove them after 10 minutes boiling, and use the water in which they are boiled to stew the grated corn; just before it is time to serve, add 1 quart of rich, sweet milk, letting it boil a few minutes. Season well with pepper and salt.

Cucumber Soup.—Peel the cucumbers (they must be young enough to have small, fine seeds) and put in a kettle to boil in a pint of water; when soft, rub through a fine colander and return to the kettle, with a little onion if liked, and seasoning to taste. Add enough sweet milk to make a quart; when hot, add a little corn-starch, or arrowroot to thicken it, and serve with toasted bread.

FLEMISH SOUP.

5 heads of celery.
1 pint of cream.

2 small onions.
2 quarts of water.

10 medium-sized potatoes.

Slice the onions, celery and potatoes, and put them in a stew-pan, with just sufficient water to cover them, and stew them until they can be rubbed through a fine colander. Return to the kettle with the water, and let it boil up; season with salt and white pepper, or a little curry powder; have the cream scalding hot, in a pitcher standing in hot water, and add to the soup just before serving. If onion is disliked, 2 small carrots may be substituted for the onions. This is an economical soup, and excellent. Make $\frac{1}{2}$ the quantity if desired.

Okra or Gumbo Soup.—The foundation for this should be stock, or broth made of a chicken, or, what is better even for any *chicken* soup, an old fowl. Carefully pluck, draw, singe and wash the fowl; cut it in pieces, cover with cold water, put on to boil up, skim, and then place the kettle where it will slowly cook. A little salt may be added if the fowl is young, but if old, simmer for an hour before adding the salt. When the fowl is done, take up the breast, thighs and legs, which can be served with a sauce for dinner, or made into salad; then slowly cook the remainder of the fowl to "rags," after adding pepper, a little sweet herbs, and a trifle of cayenne, and an even teaspoon of powdered sassafras leaves. Strain through the fine colander and return to the kettle. Add a few slices of salt pork, if the fowl was lean, then wash and slice a quart of green okra and add to the soup; cook until the pork and okra are done. Serve with boiled rice, boiled onions and rolls or bread. Good and inexpensive.

Italian Soups.—These are made by adding to hot stock, either macaroni, vermicelli, semolina, or other Italian pastes. They should be boiled for 10 or 15 minutes in water to cover them, before adding them to the stock. Macaroni and vermicelli should be cut in short pieces about half an inch long, before being added to soup.

Julienne Soup.—For a soup to serve for 5 or 6 persons, take 2 or 3 middling-sized carrots (only the red parts), a middling-sized turnip, a piece of celery-root, the core of a lettuce, some sorrel leaves, an onion, the white of half a leek. Rasp, peel or pluck these vegetables according to their nature; wash, drain them, and

mince them to "Julienne," that is, cut them in thin fillets about an inch long; carrots, turnips, celery and leek, all in equal lengths. Fry the onion and leek in a little butter, then add the carrots, turnips and celery, raw if tender, if not, blanch them. Season with salt and a little sugar, and add 2 quarts of good stock. Let it simmer for $\frac{1}{4}$ of an hour before serving.

Mock Bisque Soup.—Take $\frac{1}{2}$ can of tomatoes, cook until tender, and strain; cook 2 pints milk in a double boiler, and in a small sauce-pan cook 2 teaspoons of corn-starch and 1 tablespoon of butter, adding enough of the hot milk to make it pour easily; now stir this into the boiling milk carefully, and boil about 10 minutes. Cut 4 tablespoons of butter in small pieces and add it, mixing it well, and add also the strained tomatoes, $\frac{1}{2}$ saltspoon of white pepper, and 1 teaspoon of salt; serve hot. Before straining the tomatoes, if they are very acid, $\frac{1}{2}$ saltspoon of soda will improve them, by neutralizing the acid.

Mushroom Soup.—Cut a hip of veal in rather large pieces, and break the bones; allow to each pound a little less than a quart of water. Season with salt, pepper, and $\frac{1}{2}$ dozen blades of mace. Boil until the meat falls to pieces; then strain into a clean soup-pot. Have ready a quart of mushrooms, peeled and divested of their stems; put them into the soup, adding $\frac{1}{4}$ pound of butter divided into bits, each bit rolled in flour. Boil until the mushrooms are tender; keep closely covered; have toasted bread in small pieces in the soup-tureen, and pour the soup over it.

Noodle Soup.—Beat the yolks of 2 eggs until light; add flour and a little salt. Mould very stiff, then roll thin, and cut in narrow strips, about an inch long. Put in boiling water for 10 minutes, then in cold water for 3 minutes. Add this to 3 pints of hot stock.

Onion Soup.—Use 1 medium-sized onion. Put a piece of butter the size of an egg into a sauce-pan, or spider, and slice the onion into it. Let it fry until a delicate brown. Put in 1 quart of stock or hot water, with herbs if liked, salt, white pepper, and a dust of cayenne. Strain into the tureen, add 3 crackers, halved and well toasted, and send to the table.

Palestine Soup.—Peel and slice a quart of Jerusalem artichokes, 4 onions and 1 head of celery. Have 3 pints of water in the soup-kettle, or white veal stock or broth; add the vegetables, with pepper, salt, a bit of butter and a teaspoon of sugar. When done, rub through the fine colander, and return to the kettle to keep hot; add a pint of cream, and send to the table hot, with croutons.

Canadian Pea Soup.—Put a quart of whole hard peas, or split peas, in 2 quarts of cold soft water, and set on the fire in the morning. Let it boil, and as soon as the peas begin to soften, mash with a long-handled iron spoon, as much as possible, and skim off the skins as they rise to the top of the kettle. About 10 o'clock add to the peas a pound or more of salt pork, and if liked, a small onion cut finely. Boil together until noon, then take out the pork, add a little salt if needed, and a bowlful of bread, finely shaved from the loaf, which thickens the soup and prevents the peas from settling to the bottom of the tureen. This is a most nutritious and palatable soup. The pork can be served in thin slices, with vegetables, and chili sauce, or sour baked apples.

Green Pea Soup.—Into the broth in which a leg of lamb has been boiled, put the shells of a quart of tender young peas; let them boil in the broth for $\frac{1}{2}$ hour, then strain out the shells and put in the peas to boil 20 minutes longer. Serve with any "soup-addition" liked.

Potato Soup.—Slice 6 large potatoes and boil until tender; mash fine and rub through a colander into the soup-kettle; add 2 quarts of sweet milk. When it comes to boiling, add noodles already boiled in salted water. Season the soup to taste, and serve.

Pumpkin Soup.—Peel the pumpkin and cut into pieces (removing the seeds). Put it into boiling water with some salt, and leave it to boil until reduced to a pulp thin enough to pass through a strainer. Melt a piece of butter in a sauce-pan with a wine-glass of cream. Strain the pulp and add, with salt and pepper to taste, and a pinch of flour. Let the whole simmer $\frac{1}{4}$ hour, thicken with the yolk of an egg, and serve.

Rice Soup.—Put a piece of butter the size of an egg and 1 cup of bread crumbs in a skillet, and fry them as thoroughly brown as possible without burning. When sufficiently browned, pour on 3 quarts of boiling water, and add a pint of rice, a head of finely cut celery, and a little salt. Stew all together until the rice is tender. Add a cup of rich milk or cream, and serve. Half the above quantity will serve a small family.

Sago Soup.—Wash 5 oz. sago in warm water, set it in a saucepan with 2 quarts of milk, and simmer until the sago is thoroughly dissolved; season with pepper and salt, and add a cup of cream before serving. Good clear stock is generally used for both sago and tapioca soup, but they are even nicer made with milk.

For Semolina, Macaroni and Vermicelli Soup, see "Italian Soups."

French Sorrel Soup.—Take a large handful of garden sorrel; wash thoroughly, and cut finely with shears, and add some lettuce leaves and sweet herbs, also finely cut. Drain thoroughly on a sieve, then put them in a frying-pan with butter already melted, and fry, stirring with a spoon. After about 10 minutes of cooking in this way, put in the soup-kettle, with 2 quarts of boiling water, and add salt, white pepper, and bits of butter well rolled in flour. Serve rolls with the soup; hard boiled eggs, sliced into the tureen, are an addition much liked.

Tapioca Soup.—Made like sago soup, which see, only the tapioca must be soaked for at least $\frac{1}{2}$ hour in warm water before being put into the milk.

Tomato Soup.—Put 1 quart of tomatoes in 1 quart of boiling water and let them cook thoroughly; set 1 quart of milk in a pitcher or tin, into a kettle or pan of hot water to scald. When the tomatoes are done, add a teaspoon of soda, and when foaming ceases, add the hot milk with a generous lump of butter; salt and pepper to taste. Cream may be added instead of butter, and more milk and less water used if desired. Brown a few crackers, roll fine and add to the soup. Serve with small pieces of dry toast without butter.

Tomato Soup No. 2.—One pint of canned tomatoes, or 4 raw ones, cut finely; add 1 quart of water and cook thoroughly; then add 1 teaspoon of soda, which causes it to foam. Immediately add 1 pint of sweet milk with a little salt and butter. When this boils, add 8 small crackers, rolled fine, and serve.

Mock Turtle Soup.—Soak over night 1 quart of black beans. The next day boil them in 4 quarts of water, until soft enough to rub through a colander; return them to the soup-kettle. Tie in a bit of strainer cloth (which must be perfectly clean) a bit each of thyme, parsley and summer savory; let it boil in the soup. Add butter the size of an egg, cut in bits and rolled in flour; also salt and pepper to taste. Cut the yolks of hard boiled eggs in quarters and add to the soup, with 2 sliced lemons. This is a good imitation of real turtle soup.

Vegetable Marrow Soup.—Pare and cut in quarters a large vegetable marrow,

and remove the seeds from it. Dissolve a slice of fresh butter in a stew pan, and put in the marrow with a little salt, pepper, a lump of loaf sugar and a little nutmeg. Stew in water to cover it until it will pass through the fine colander, or hair-sieve; then add enough scalding hot milk to make it the consistency of cream; serve with fried bread cut in the shape of small dice.

Victoria Soup.—Wash and scald $\frac{1}{2}$ pound of pearl barley; put it in the soup-pot with 3 pints of white veal stock, and simmer gently over a slow fire for $1\frac{1}{2}$ hours, by which time the barley will be nearly dissolved; remove $\frac{1}{3}$ of it to a small soup-pot, rub the remainder through a tammy or sieve, pour over the whole barley, add half a pint of cream, season with a little salt, stir it over the fire until hot, and serve.

This soup may be made with rice, and these were the only soups eaten by Queen Victoria during the time Francatelli was *chef* in her household.

White Soup.—White soup is in reality white sauce, only in larger quantities and not quite so strong. White soups, such as celery, cauliflower, Palestine, potato, vegetable marrow, have all the same basis, viz., reduced stock and boiling milk, and only differ as to which stewed vegetable is rubbed through the wire sieve and added.

MEAT, POULTRY AND GAME SOUPS.

Alma Mater Soup.—For this take a sheep's head and pluck. Have the head cut in several pieces with a cleaver, wash thoroughly in salted water and put in the soup-kettle with a gallon of water; cut the liver and heart in slices, and fry brown in a little butter, then add to the soup; simmer gently until the bones separate from the meat. At this stage take from the fire, and remove all the bones from the meat; cut the meat in very small pieces, and return to the kettle; fill in with hot water to keep the gallon, add 1 teacup of pearl barley; season with 4 cloves, pepper, salt, and a bunch of sweet herbs; cut finely 2 onions, 2 carrots, 1 turnip, and cook until the vegetables are done. Serve with forcemeat balls.

Beef Soup.—Put 1 small beef bone in about 1 gallon of water; when it has simmered about 3 hours, add 4 potatoes, 2 turnips, 2 onions, and 2 tablespoons each of rice and barley; season with salt and white pepper, and boil 1 hour longer. Add 1 tablespoon of chopped celery just before serving.

Bonne Femme Soup (*Egg Soup*).—When you have broth in which meat has been boiled, or poultry, even if thin and not transparent, a good soup may be made when eggs are plenty by boiling for 20 minutes, 4 eggs for every quart of broth. Throw the eggs in cold water, and shell them. Have the broth well strained, and put it back in the kettle. Cut the whites of the eggs in rings, and pulverize the yolks with a fork on a plate (they should be mealy with the boiling) and add whites and yolks to the broth, also a few bits of butter well rolled in flour. Do not boil after the egg mixture is put in the kettle.

Bouillon.—For a party of 12, allow 6 pounds of beef cut finely, and 2 shin-bones of beef well broken. Put over the fire with 3 quarts of cold water, and bring to a boil. Skim thoroughly, and set back on the range to simmer slowly for 5 hours; then strain through the fine colander. Remove every particle of fat, which can be done by drawing the edge of blotting paper across the bouillon. After the fat is removed, return to the kettle and reheat. Season with pepper

and salt, and serve in bouillon-cups (*i. e.*, cups about the size of coffee-cups, with 2 handles) when served at lunches. Cloudy bouillon is caused generally by rapid boiling and careless skimming.

Clear Soup.—Cut 4 lbs. lean beef into small pieces, carefully removing all the fat; pour on 1 gallon of water, and boil it up 3 times, skimming well each time; if not well skimmed, it will not be clear. Into each of 2 small onions stick 4 cloves firmly, scrape 2 small carrots, and put them into the soup; add 6 blades of mace, 1 bunch of parsley and 1 teaspoon of celery seed, salt and pepper; boil until the vegetables are tender, strain through muslin, and return to the soup pot; add the whites of 4 eggs, well beaten, and boil until they gather to one side; skim, and tint it a delicate amber with a little caramel; wash the muslin, pour the soup through again, and serve.

Chicken Soup.—This need not be made wholly of young spring chickens, for they are more valuable for roasting or broiling; but the remnants of raw chickens when used for fricassee or "chicken supreme," can be utilized in a soup, and if a large quantity of soup is needed, a few pounds of veal bones and cheap veal trimmings may be simmered with the chicken, which will flavor them all. Let the soup-pot come to boiling; skim, and then set on the back of the range to slowly simmer for 3 or 4 hours, or until the meat drops from the bones. Season with salt and pepper, or a little curry powder instead of pepper, and a soup-bunch; then simmer 10 minutes longer, strain through the cloth strainer, and return to the kettle. Thicken with a little corn-starch, and color and flavor with caramel. Serve with oyster crackers.

Chicken Soup No. 2.—Take the remnants of roasted chickens—the necks, wings, all the bones, and every part left from dinner the day previously; add water sufficient to cover it all; slowly simmer until the meat separates from the bones. Then add any gravy or remnants of dressing, and let it boil up once. For the remnants of 2 chickens there should be 3 pints of soup; strain through cheese-cloth or fine colander, put the soup back into the kettle, add more seasoning if needed; thicken with bits of butter well rolled in flour; boil up once, and serve immediately.

Chicken and Gumbo.—Take a fair sized chicken, cut up as for fricassee, pick out the bones, and fry with $\frac{1}{2}$ lb. finely chopped bacon. Add 1 gallon water, 2 pints small okras, and the same of tomatoes; season highly with white pepper, salt and cayenne, and simmer 4 hours. Put 1 tablespoon of boiled rice in each plate before serving, and pour the soup over it.

Gumbo file is made the same way, but seasoned more highly, and tender roots of young sassafras added. Green corn, cut from the cob, and lima beans are also added sometimes.

CONSOMMÉ.

6 quarts of water.
2 carrots.
2 leeks.

4 pounds of lean beef.
2 turnips.
1 bunch of herbs.

2 old fowls.
2 onions.

Let it simmer slowly for 8 hours, or till it is reduced to 2 quarts. Observe the usual rule of skimming, straining and seasoning, and use for dainty appetites, with quenelles, or any garnish liked best.

Duchess Soup.—Put a quart of rich stock, or *consomme*, on the range to heat; when it comes to boiling, thicken it with a tablespoon of arrowroot, and then pour it into the tureen containing neatly cut lengths of roasted poultry or game.

Egg Soup.—Break 6 fresh eggs into a bowl; add a pint of sweet cream and a

little white pepper and salt; beat the eggs well and add the cream; pour into a square tin well buttered, and place it in the oven in a dripping-pan of hot water, and bake about $\frac{1}{2}$ hour. Let it get cold, then cut in small squares, put in the soup tureen, pour 2 quarts of hot stock, or broth, over it, and send it to the table. Milk may be used instead of stock. This soup is rich and may be served with hot toasted crackers when the dinner is otherwise light.

Every-day Soup.—Go in the pantry in the morning and put into the soup-kettle all the nice meat bones, cold bits of meat, cold gravy, also any cooked vegetables left the day before. Get ready the meat for dinner, and put the trimmings in the kettle. Season with a little salt, a few whole cloves, and a few peppercorns broken in the mortar; add also a small onion cut finely. Put in the kettle enough water to serve each person with $\frac{1}{2}$ pint of soup. Simmer all together until an hour before dinner; then strain and return to the kettle. Have ready, shredded, and standing in cold water, some vegetable, either cabbage, turnips, carrots, asparagus, green peas or spinach, and add to the soup. When the vegetable is done, serve with rolls or bread.

Florence Soup.—Put on to heat, 3 pints of white stock, beef, veal or chicken broth, and add the yolks of 3 eggs well beaten, and a half pint of cream; boil 3 or 4 sticks of macaroni in salted water for 10 minutes; cut in $\frac{1}{2}$ inch pieces and add to the soup; have the bottom of the soup tureen covered with grated cheese, pour over the hot soup, and serve.

Game Soup.—This can be made of a squirrel, wild duck, rabbit partridge, 2 or 3 squabs (young pigeons) or any kind of game brought in in too small a quantity for serving in any other way, and is a good soup for an invalid, or small family. Dress the game by skinning, if a quadruped, or, by picking, if a fowl or bird. Draw, and wipe clean with a wet cloth. Cut in small pieces and boil slowly until the meat separates from the bones; then take out the bones and season with pepper and salt. Cut a piece of butter the size of an egg, in small bits, roll each bit in flour; add, and let it boil for $\frac{1}{2}$ minute, and serve with thin slices of bread laid on the bottom of the tureen.

Game soup can also be made by a recipe for stock, using game instead of beef or other meat.

Hotch-potch Soup.—Soak $\frac{1}{2}$ pint of split peas over night, and add $\frac{1}{2}$ teaspoon of soda to the water; the next morning, turn off the water and rinse again; then put them to boil in 2 quarts of water; boil slowly 2 or 3 hours; then add a pound of beef or mutton, cut in small pieces, a carrot, a turnip, a small cabbage, an onion, all cut finely, and 3 or 4 large slices of salt pork. Add salt and pepper to taste, and cook until the meat is done, keeping it just covered with water. This is fine in a cold day in the winter, and is an inexpensive dinner by itself, without other meat.

Meat Broth.—Put the beef or mutton on in cold water and let it heat slowly; a scum will rise when it comes to the boiling point; remove this very carefully, then cover the pot, and keep it at a gentle simmer; from time to time lift the cover and skim till no more scum rises. Take out the meat when thoroughly cooked. Set the meat in the oven with the door of the oven open a little way to keep it warm. Have some thin slices of toasted bread well buttered, or some browned crackers in the tureen, and after pouring the broth through the cloth strainer, pour over the tureen and serve. Instead of the toast, a little chopped cabbage, boiled in a separate stew-pan, can be added, or any other vegetable liked.

MULLAGATAWNY SOUP.

1 fowl or rabbit, or 2 lbs. of lean beef or veal.	2 large onions.	Peel of 1 lemon.
1 bunch of herbs.	A bit of garlic (or 2 or 3 cloves).	
2 tablespoons of curry powder.	2 quarts of cold water.	

Cut the meat in small pieces and cover with the water; slice the onions, fry them brown in beef drippings, and put the onions, lemon peel, herbs, and cloves or garlic, with the meat, and simmer slowly for 5 hours, skimming well; then strain through the fine colander. Return to the kettle, add salt to taste and ground white pepper, and a teacup of rice. When the rice begins to break in pieces, add the juice of a lemon, and 2 tablespoons of curry powder.

Mullagatawny means "pepper pot," and it is an Indian soup. It always requires to be well seasoned, and rice should be served with it.

Mutton Broth.—Take 2 lbs. of what is known as the scrag-end of the neck of mutton; remove as much as possible every particle of fat. Put it in a quart of cold water, with a slice of onion and a saltspoon of salt. Let it simmer very gently for 3 or 4 hours; skim occasionally. Strain off the broth and allow it to cool. Take off all fat, and warm up when required. When not required for invalids, some chopped parsley may be added to the broth, as well as other vegetables, such as turnips, carrots, or leeks.

Oxtail Soup.—(*Rich beef soup*).—Two shin-bones of beef well broken, and 2 beef-tails cut in short pieces. Put in the soup-kettle with 3 quarts of water. Let it come to a boil and carefully skim; then slowly simmer until the meat will separate from the bones. Take out the meat and bones with a skimmer into a pan, and cut the meat in small pieces, putting back the bones to simmer until an hour before dinner; then take out the bones again and add a carrot, a small turnip, a small onion, all cut finely, with herbs, salt and pepper to taste, and if preferred, a tablespoon of any of the ready-made meat sauces liked by the family. Fry the bits of meat a nice brown, in a little butter, and place in the bottom of the tureen; pour the soup and vegetables over the meat and send it to the table. Serve with rolls, bread, or toasted crackers. The ingredients of this soup may be all simmered together for 4 or 5 hours, then strained through the cloth strainer. A tablespoon of corn-starch in a little water may be added for thickening, and a tablespoon of caramel-sugar used for coloring. Sufficient for 8.

Rabbit Soup.—Cut a young rabbit in small pieces and soak in water for an hour; then put in the soup-pot, and cook until the meat separates from the bones. Take all the best meat, and return the remainder to the kettle, with a carrot, turnip, onion, and 2 or 3 sticks of celery, all cut finely, with seasoning to taste, and simmer for 2 hours longer; then strain the soup and return to the kettle; add a piece of butter about the size of an English walnut, cut in pieces and rolled in flour, to thicken it. There should be 3 quarts of broth when done. Cut the meat in small pieces, put in the tureen, and pour over the hot rabbit soup.

Turkey Soup.—After a turkey has been served for dinner and the meat has been taken from the carcass, break all the bones finely and put in the soup-kettle, with any remaining dressing or gravy, and add 3 quarts of water if the turkey was large—less for a small one. Let boil slowly for 2 or 3 hours; then pour through a coarse colander, and serve with toasted crackers.

Mock Turtle Soup.—Scald a calf's head, and wash it clean. Boil in a large pot of water for half an hour, then cut all the skin off by itself; take the tongue out, take the broth made of a knuckle of veal, put in the tongue and skin, with an onion, $\frac{1}{2}$ ounce each of cloves and mace, $\frac{1}{2}$ a nutmeg, all kinds of sweet herbs

chopped fine, 3 anchovies; stew it till tender; then take out the meat, and cut it in pieces 2 inches square; cut the tongue, previously skinned, in slices; strain the liquor through a sieve. Melt $\frac{1}{2}$ lb. butter in a stew-pan; put in $\frac{1}{2}$ lb. flour; stir it till smooth; if at all lumpy, strain it; add the liquor, stirring it all the time; then put to the meat the juice of 2 lemons. Season with pepper, salt and cayenne pepper, pretty high; put in 5 meat balls, 8 eggs, boiled hard. Stew it 1 hour, gently.

Veal Soup.—Into 4 quarts of water put a 3 lb. joint of veal, well broken, and set on the stove to boil. In a separate dish put $\frac{1}{4}$ lb. of macaroni, with just water enough to cover it, and boil till tender; then add a little butter. Finally the soup should be strained, seasoned with pepper and salt, and afterwards add the macaroni and the water in which it was boiled. Many will find it an improvement to add 1 pint of cream, or rich milk, and celery flavor.

FISH AND SHELL-FISH SOUPS.

Bouillabaisse.—Any kind of fish may be used for this dish. Chop 2 onions, and put them with a piece of butter into a stew-pan and let them brown without burning. Then arrange the fish which has been previously cut into small pieces, in the pan. Add a small quantity of the best olive oil, a clove of garlic, a bay-leaf, two slices of lemon, 2 tomatoes, and as much powdered saffron as will go on the point of a table-knife, and lastly the juice of the remainder of the lemon. Put in sufficient stock to cover the whole, and boil from 10 to 20 minutes, skimming carefully the whole time. When ready to serve, throw in a handful of chopped parsley.

Bisque of Lobster.—Wash thoroughly with a brush, a small lobster, then remove all the solid meat and put it on ice. Break finely the shell and claws of the lobster, and put it in the soup-kettle with enough water to cover it. Cut finely, and add a small carrot, 1 head of celery, and a very small onion or bit of garlic, with herbs, salt and white pepper, to taste. Boil 1 hour and then strain; put back in the kettle and add 3 pints of stock. Set it on the range where it will keep hot but not boil, as boiling causes it to curdle. Just before serving, cut the meat of the lobster in small pieces and fry brown in a little butter, and place in the bottom of the tureen. Add to the bisque the juice of $\frac{1}{2}$ a lemon, and a dust of cayenne pepper, and pour over the meat in the tureen. Serve with a French roll at each plate, or with browned crackers.

Clam Soup.—Put 25 clams in boiling water for a few minutes. Then open them and save the liquor that comes from them; add to it an equal quantity of water, 1 tablespoon of minced parsley, 1 chopped onion, butter the size of an egg, cut in bits and rolled in flour; pepper and salt to taste, 2 well beaten eggs and the chopped clams, adding lastly 1 pint of milk. Boil 10 minutes. A very nice soup. (It is better to add the eggs to this soup the last thing before taking up, as the egg is apt to curdle, if boiled.)

Newport Clam Chowder.—Wash the clams thoroughly with boiling water, and let them stand 10 minutes, when they can easily be removed from the shell. Cut off the black heads and put the bodies in a clean dish. For a peck of clams use 8 large potatoes, peeled and sliced thin, and $\frac{1}{2}$ an onion cut in small pieces. Cut $\frac{1}{4}$ pound of salt pork into small pieces and fry brown. Put the onion and potatoes into the kettle with the pork, with a tablespoon of salt, a little pepper

and $\frac{1}{2}$ a cup of flour shaken in; strain on this 4 quarts of the water in which the clams were scalded, and let all boil 15 minutes; then add the clams, 6 crackers split, $\frac{1}{2}$ a cup of tomato sauce; cook 10 minutes longer, and serve.

Salt Codfish Soup.—Take a piece of codfish the size of the hand, scald, skin, and pick in small pieces, and put in a kettle with a quart of water; soak, and change the water until it is fresh enough; then add 1 pint of cream and 1 pint of water and let it come to boiling. Serve it with buttered, toasted crackers.

Fish Soup.—Take any kind of fresh fish liked best—about 2 pounds for 3 quarts of water. Cut in small pieces and put in the soup-pot—skin, bones and all—with a large onion, sliced, a bunch of parsley, a sliced lemon, with a little salt and white pepper. Cook to rags; then strain through the cloth strainer, and return to the kettle. Add a heaping tablespoon of corn-starch wet in half a teacup of water; let it come to boiling, and serve with quenelles, if desired.

Fish Soup Maigre.—Take a fish that weighs about 2 pounds; cut enough slices for the frying-pan, and put the remainder, with the bones, in the soup-kettle, with an onion if liked, a sliced lemon, a bunch of parsley, salt, and white pepper. Simmer together for an hour; strain and return to the kettle, and add $\frac{1}{2}$ pint of cream, and enough hot water to make 3 pints of soup. Fry the fish cutlets in butter, and add to the soup, or serve on a platter instead of meat on a fast-day. If the fish is not added to the soup, serve it with noodles.

Oyster Soup.—Put a pint of small oysters with their liquor in a quart of boiling water and let them become plump; then take them out with a skimmer, rinse thoroughly in warm water, and be sure there are no bits of shell adhering to them. Strain the soup-water through the cloth strainer and return to the kettle. Let it come to a boil, add a little white pepper and a very little cayenne, with a piece of butter the size of an egg, cut in bits and rolled in flour. Boil a minute after this, then pour over the oysters in the tureen and serve with small crackers, or large crackers split, and browned in the oven. A richer soup is made by leaving out one pint of water and substituting a pint of cream.

Provençal Soup (*Bouillabaisse*).—Slice and shred 2 large onions and fry in 2 tablespoons of salad-oil until the onions are quite yellow; then add a desert-spoon of Spanish sweet red pepper, a little salt and a quart of good stock, or water; boil together for 3 minutes; then add small slices of any kind of fish most agreeable or convenient; boil these for a few minutes and serve the *bouillabaisse* with the crusts of a round French roll fried in a little oil and butter. The slices of fish may be removed to a platter, covered with one of the fish sauces, and served as a course separate from the soup.

FISH.

Fish has been an important article of food in all ages and in all countries. Although less nourishing and stimulating than meat, it has much nutritive value. Its abundance and cheapness commend it, and it should be used freely in the season when it is best and cheapest. The flesh of fish when in season, *i. e.*, before spawning, is solid and boils firm and curdy. It should be used as fresh as possible, as it soon spoils. White fleshed fish are the most easily digested, and the oily varieties, like mackerel, salmon and eels, are the most difficult of digestion. White fleshed fish is the most delicate, and the red fleshed and oily kinds the most nourishing. Fish is highly nitrogenous, and requires an abundant use of starchy food in combination with it, to supply a sufficient amount of heat-giving material; and, owing to the lack of oil in the white fleshed varieties, they are best cooked in fat. Lemon juice or vinegar (being acid) are excellent as an accompaniment, or in the sauces, for fish and shell-fish, because of the alkaline nature of their juices. It is essential to the wholesomeness of fish that they should be thoroughly cleaned and cooked.

The popular idea that fish aid brain and nervous development because of the phosphorus they contain is wholly erroneous. There is no relation between the amount of phosphorus passing through the system and the intensity of thought. It is not because of the phosphorus they contain that fish, oysters and eggs, are suitable for students, but because they are easily digested, and those leading sedentary lives do not need the hearty food suited to a day-laborer, besides which they are adapted to those on whose nervous energies there are large drains because of the large amount of nitrogenous material which they contain. It should also be said that fish contains no larger per cent. of phosphorus than meat.

The following table will show the chemical composition of some of the common varieties of fish and shell-fish. The large percentage of albumenoids found in black bass, salt codfish, smoked haddock, canned sardines, etc., will be noticed, and the large percentage of fats in eels, salt mackerel, smoked halibut and salmon. Note also the difference in the potential energy in pickerel and salt mackerel. The lack of carbohydrates (*i. e.*, starch, sugar, etc.) which is common to all

TABLE SHOWING THE PERCENTAGE OF FOOD ELEMENTS IN VARIOUS FISH.

	Water. %.	Albumen- oids. %.	Fats. %.	Mineral Matters. %.	Potential energy in 1 lb. Calories.
Bass, black.....	76.7	20.4	1.7	1.2	450
Blue fish.....	78.5	19.0	1.2	1.3	405
Codfish, fresh.....	82.6	15.8	0.4	1.2	310
Codfish, salted (Salt 23%).....	53.6	21.4	0.4	1.6	410
Eel, salt water.....	71.6	19.3	9.1	1.0	725
Flounder.....	84.2	13.9	0.6	1.3	285
Haddock.....	81.7	16.8	0.3	1.2	325
Haddock, smoked.....	72.5	23.7	0.2	1.5	450
Halibut, fresh.....	75.4	18.3	5.2	1.1	560
Halibut, smoked.....	49.4	20.6	15.1	2.0	1020
Herring, fresh.....	69.0	18.5	11.0	1.5	810
Mackerel, fresh.....	73.4	18.2	7.1	1.3	640
Mackerel, salted (salt 10.6%).....	42.2	22.1	22.6	2.5	1365
Pickerel.....	79.7	18.6	0.5	1.2	365
Salmon, fresh.....	63.6	21.6	13.4	1.4	965
Salmon, canned.....	61.9	20.1	15.7	1.3	1035
Sardines, canned.....	56.4	25.3	12.7	5.6	1005
Trout, brook.....	77.7	19.0	2.1	1.2	440
Whitefish.....	69.8	22.1	6.5	1.6	685
Clams (Carbohydrates 2.0%).....	85.8	8.6	1.0	2.6	240
Lobsters.....	81.8	14.6	1.9	1.7	350
Lobsters, canned.....	77.7	18.7	1.1	2.5	395
Oysters (Carbohydrates 3.6%).....	87.1	6.1	1.2	2.0	230
Shrimps.....	70.8	25.6	1.0	2.6	520
Terrapin.....	74.5	21.0	3.5	1.0	540

fish, makes apparent the wisdom of accompanying them with starchy foods, like potatoes, etc., to supply the system with the food elements which they lack. For an explanation of the terms "albumenoids," "carbohydrates," "potential energy" and "Calories," see our article elsewhere on the composition of foods.

Cleaning Fish.—Fish should be cleaned as soon as possible after being caught. Make an incision in the under side from the gills half way down, and take out the insides; carefully remove the thin black membrane lining the cavity, as it is apt to impart a bitter flavor to the whole fish if it is left. It is best to remove the white part adhering to the bone, called the sound, although some people leave it. Do not cut off the tail and head if it is to be served whole. Scrape from the tail towards the head to remove the scales; take out the eyes, and wash in strongly salted water; dry carefully, and wrap a cloth sprinkled with salt around it, and keep near the ice. The salt checks the outflow of the juices. Handle the fish as little as possible, and do not wash it too much (one water is usually enough) and do not let the fish soak in the water, as that will extract the juices and detract from its value. Keep fish in a cool place near the ice, but do not let ice touch it, as that will soften and injure, if it does not spoil it. Do not keep fish in the ice chest, as it will taint anything like milk or butter. Keep any fish left after the meal in the same way.

To Skin a Fish.—Cut a narrow strip along the backbone, using a sharp knife, and removing the fin on the back; then run up the knife through and under the bony part of the gills and peel the skin off backwards toward the tail, holding the bony part of the gills with the thumb and finger; then peel off the skin from the other side in the same manner, and throw it away.

To Bone a Fish.—Fish, like herring and shad, abounding in fine bones, are not boned, but whitefish, mackerel, cod, etc., can be boned as follows: Clean, skin and spread it out flat on a board; then begin at the tail, and run a sharp, thin knife under the flesh, close to the bone, and loosen the backbone with the forefinger. Take pains not to break the flakes, and when the flesh on one side is loosened, slip the knife under the bone on the other; when all the bone is loosened, pull it from the flesh. Any small bones remaining in the flesh can be felt and removed with the fingers.

Fillets of Fish.—These are the flesh of fish cut into small pieces, eggd, bread-crumbed, and fried. The fish for fillets should be skinned and boned.

Hints.—The earthy taste in fresh water fish can be removed by sprinkling on salt and leaving it on a few hours, or over night, before cooking.

If fish are dipped in hot water for a minute, they will scale much easier. To remove scales, there is no instrument equal to a currycomb—it is every way superior to a knife. The scales and entrails should be removed, and also the blood and white skin along the backbone, as soon after the fish is caught as possible; then rinse, wipe dry, and keep near ice. Keep the eggs, or fish roe, and cook it with the fish.

All fish lose nourishing power by being salted. The quickest and best way to freshen salt fish is to soak it in sour milk.

Salted fish and canned fish, oysters, lobsters, etc., can be kept in the store-room against an emergency, but great care must be taken in the case of canned meats, fish, lobsters, and vegetables, that the brands selected are put up in *pure tin* cans; a mixture of lead with the tin is sometimes used, the oxide of which is poisonous. All the contents of a tin can when opened should be immediately removed into an earthen or glass dish, as oxydization proceeds rapidly after the can is opened, and the inside, with its contents, exposed to the action of the air.

The knives and spoons used about fish should not be used for other food till well cleaned, as they will impart a fishy flavor to it. Rub steel knives or forks with fresh lemon or orange peel to take off the fishy taste.

Broiling a fish best retains its nourishing qualities; baking is next, while boiling retains the least—in fact, boiling is the least desirable way of cooking them. Small fish are usually fried; those of medium size broiled and baked, and the largest can be boiled.

To thaw out frozen fish, put it in cold water, and leave it until it is flexible and the frost is all drawn out; then dress and cook at once.

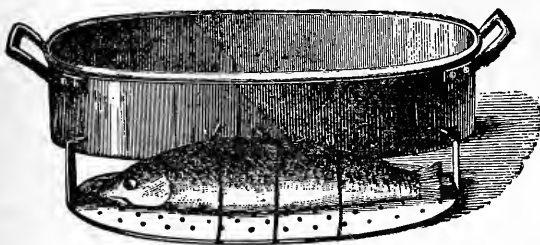
Fish, if kept near ice and very cold, retains much of its freshness, but if once heated, its delicate flavor cannot be restored. Fish that is not quite fresh can be

improved by washing in vinegar and water, or permanganate of potash and water. It is afterwards better fried than boiled, but no dressing will entirely conceal its quality. Fish purchased in the market should be used the same day if possible.

The garnishing of fish is an art, if nicely done. Celery tops, horseradish, common radishes, water-cresses, parsley, nasturtium flowers, sliced lemons and red pickled beets, cut in fanciful shapes, are among the most effective and popular things to use.

Frying, Boiling, etc.—As the directions for *frying, boiling, stewing, broiling* and *baking* fish apply to nearly all kinds, we will give these methods quite fully, instead of describing the same method over and over again for each different kind of fish. Any one who masters the *process*, can easily cook any fish adapted to that way of cooking.

To Boil Fish.—When boiling fish, to have the water bubble is worse than useless, as it cracks the skin. If fish is put into cold water at first, it, like meat, gets dry (see our article on the principles involved in cooking meat). A compromise is therefore made, and salt is added to the water (use about 1 oz. of salt to each quart of water); it is well also to add about 1 tablespoon of vinegar or lemon juice to each 2 quarts of water. Vinegar or lemon juice are valuable because albumen coagulates sooner when in contact with an acid, and they thus help to coagulate the surface albumen, and so retain the juices inside. Salt added to the water in which fish is cooked acts in 3 ways, as explained in the article on



A FISH KETTLE.

cooking meats. The old plan has been to put fish into cold water at first, but *it is much better* to put it into water as hot as the skin will bear without breaking, and this varies with each kind of fish. To break the skin is very undesirable, because it not only makes an unsightly appearance, but each crack makes an

opening through which the interior juices will escape. If a fish kettle is used, and a fish plate that can be taken up, there is no need of a cloth around the fish, but if it has to be boiled in a common kettle, it should be rolled in a piece of cloth (butter cloth is best) to keep it in shape, and it is likely to be broken when taken from the water, if the cloth is not used. Allow the fish to simmer, or boil slowly and gently, or the outside will break into pieces before the inside is done. If water is to be added, do not pour it directly on the fish, as that is apt to break the skin; pour it gently in on one side of the kettle. Too long boiling makes fish "woolly" and tasteless. The time of cooking depends entirely on the freshness and thickness of the fish, and varies so much that no rule can be given; experience is the only guide. There are 3 reliable tests by which it can be ascertained if fish has been sufficiently cooked: First, if the fins will pull out easily; second, if the skin of the fish is cracked; or, third, if a skewer passes easily when run into the fish close to the bone. Fish should always be put into the water in which it is to be cooked; if the water is poured upon it, it is apt to become broken. It should not be allowed to remain in the water after it is done; if it has to be kept hot, it should be taken up on a drainer, placed across the fish-kettle over the

hot water, and covered with a soft cloth or flannel folded several times, to prevent its losing its color. White fish cook much more rapidly than meat. Fish should be well cooked to be digestible, but should not be overdone. The reason for skimming is, that the scum will be likely to settle on the fish if that is not done, and give it an unsightly appearance. Save the liquor in which fish has been boiled, as it makes an excellent soup with a few cheap additions.

Boiling is the least desirable way of cooking fish, but salmon is not injured by boiling because it is so oily. All boiled fish should have a good sauce served with it. Hollandaise and sauce piquante go well with salmon, and oyster, lobster, shrimp, drawn butter, egg, pickle, etc., with other fish. Serve the sauce in a sauce-boat, unless the fish breaks and looks badly, in which case the bones can be taken out, the fish flaked, piled on a platter lightly, and the sauce poured over it. *Garnish* boiled fish with slices of lemon or hard-boiled eggs, parsley, button mushrooms, fried oysters, sliced pickles, Saratoga potatoes, etc.

Steamed Fish.—An excellent way to cook fish is to thoroughly clean, remove the head, skin and tail, rub with salt and lemon juice, and cook in a steamer over boiling water, instead of boiling it in the water. In many respects it is better than boiling. When done, serve on a platter on which a folded napkin is laid, pile Saratoga potatoes around it, and garnish with parsley, slices of lemon, and hard boiled egg. Serve a good sauce in a sauce-boat with it.

To Broil Fish.—Large fish need a moderate fire so as not to burn the outside before the inside is done; they are best split, in order to cook them through well, or else make notches at equal distances on the sides to admit the heat. Small fish need a clear hot fire, and may be cooked whole. Salt and pepper is all that need be applied to oily fish before broiling them, but olive oil or butter should be first spread over dry, white fish. The gridiron should always be well greased. As the skin burns easily, the flesh side should be cooked first to a golden brown; then turn and broil the skin side until it is crisp; small fish will cook in 10 minutes, and larger ones need 15 to 20. A double wire gridiron is easily turned, but the best way when an old-style iron or a single gridiron is used, is to take a knife and separate any part that sticks; then with one hand hold a platter over the fish, and with the other, turn over the gridiron; the fish will then be on the platter and can easily be returned to the gridiron without breaking. When done, sprinkle on salt and pepper, and, using a knife, spread a little butter over it, and then put it in the oven a moment to let it soak in. All oily fish, like mackerel, herring, etc., are better broiled than fried.

The pieces of fish are sometimes wrapped in a piece of oiled paper before being broiled, when very delicate broiling is desired. The paper must be very thoroughly oiled or buttered, but no oil should drop on the fire, and a very clear fire is needed. A gridiron that has cooked fish needs most thorough cleaning.

To Fry Fish.—By frying fish we mean immersing it in hot fat. The fish should be well cleaned, dried with a soft cloth, and seasoned with pepper and salt; then rub it with flour, dip it in beaten egg, and then sprinkle with fine bread or cracker crumbs; sometimes wheat flour or Indian corn meal are used, but fully cover the fish so that there are no cracks. Then fry it in smoking hot fat as directed elsewhere under "The Processes of Cooking." It should be fried a rich golden brown. A sheet of white paper can be placed to receive it after it is fried, that it may be free from all grease. Some cooks lay it in the oven for a moment, and then serve. A very little time is all that is needed to cook it (from 2 to 5 minutes) if the fat is the right temperature; a general mistake is to over-cook it. Do not fry oily fish, like mackerel, salmon, etc. Halibut, cod, etc., can

be skinned, boned, and cut into small pieces, and then fried. Fish which is very cold should be slightly warmed first, or it will chill the fat and become greasy. Fish thus fried is nicer than by the common method of frying in a frying-pan; try it once, if you never have.

Fish is also sometimes fried in batter. The fish should be dried, seasoned with pepper and salt, dipped in the batter, and quickly put into the hot fat. The batter must be smooth and thick. As soon as the batter is of a bright golden color, take it out, and if the fish is thick, put it in the oven for a few minutes. The fat is more than 100° hotter than boiling water, and the inside part of whatever is cooked in it goes on cooking after it is taken out of the fat.

For sauteing or frying in the frying-pan, butter is not desirable, as it scorches too easily and gives a bad odor to any fish that requires long cooking. Small brook-trout, however, are sometimes cooked in butter in the frying-pan. For ordinary sized pan-fish, or slices of large fish, the fat from a few thin slices of salt pork is excellent; the thin scraps of fried pork are used with other garnishing, around the fish on the platter.

Fried fish can be garnished with parsley, lemon, pickle, etc., and served with any acid sauce, like tomato or tartare. Small fish should be arranged with heads and tails alternating. Arrange fillets in a circle, one overlapping the other.

Baked Fish.—Clean, dry, and stuff the fish with one of the stuffings given below, and sew it. Long, narrow fish bake best if a trussing needle is run through the side of the head, then the middle of the body, and then the tail, in such a way as to form the fish into the shape of a letter S; it will then rest on its belly while baking, instead of on its side. Shad or other short, broad fish, may be propped up on their bellies with peeled potatoes, or pieces of old bread. In order to lift the fish out easily when done, it is best to put the fish on an iron or tin baking sheet, with handles at the ends, and set that in the baking pan; if you have no such baking sheet, 2 broad strips of cotton cloth can be used to lift the fish out with, laying the cloth across the pan before putting in the fish. Grease the baking sheet well with salt pork fat, to keep the fish from sticking, and put some pieces of pork under the fish also. Sprinkle it over with salt and pepper, rub on soft butter, and put narrow strips of pork in gashes cut across the back of the fish about 2 inches apart. Dredge it well with flour, and bake in a hot oven until nicely browned, basting it often to prevent the skin from cracking. Some cooks put a little water in the baking pan, but it is better not to do so, but use the pork fat to baste with. When done, lift it carefully and put it on a hot platter, take out the trussing needle or threads, and remove the salt pork. Garnish with parsley, water-cresses or Saratoga potatoes, and serve a drawn butter or Hollandaise sauce with it. The best fish for baking whole are fresh shad, bass, cod, blue-fish, haddock and small salmon.

Stuffing for Baked Fish.—Take 1 cup cracker crumbs, 1 teaspoon of salt, 1 saltspoon of pepper, 2 teaspoons of chopped parsley, 4 tablespoons melted butter. If it is wanted more moist, wet the cracker crumbs with $\frac{1}{2}$ cup of warm water, or with 1 beaten egg. This makes a stuffing for a fish weighing 4 to 6 lbs.

Stuffing, No. 2.—Take bread crumbs, 1 well beaten egg, 1 tablespoon chopped suet, 1 tablespoon chopped parsley, 2 tablespoons minced onion, a little butter, pepper and salt. Stuff the fish, sew or tie up, and bake.

Oyster Stuffing.—Prepare $\frac{1}{2}$ pint of buttered cracker crumbs; then take 2 cups oysters, roll each one in the cracker crumbs (draining them first) and fill the

fish with them; sprinkle the oysters with the balance of the crumbs, sew up the fish, and bake.

Oyster Stuffing, No. 2.—Season a pint of oysters with salt, red pepper and lemon juice; fill the fish with the oysters, sew up, and bake as before directed.

To Stew Fish.—Cut the fish in small pieces and sprinkle on salt; then in $\frac{1}{2}$ pint of water boil 2 onions (sliced) and when cooked, pour off the water; then add 1 cup of water, the juice of $\frac{1}{2}$ a lemon, salt to taste, a saltspoon of pepper, and a sprig of parsley. Cook the fish in this till done (about 20 minutes) and serve very hot. Rub to a cream 1 teaspoon of butter and 1 large teaspoon of flour, and thicken the gravy with it. Any fresh water fish can be thus stewed.

Spiced Fish.—Remove all skin and bones, put it in a deep dish, and enough hot, spiced vinegar (prepared by boiling cloves and allspice in the vinegar 10 minutes) to barely cover; as soon as cold, it can be used. Remains of any cold, fresh fish can be used thus.

Fish au Gratin.—Cut an onion in small pieces, and fry it in 3 tablespoons of butter; skin and bone 2 lbs. fish, cut it in pieces, roll and dip it in flour, and fry it in the onion and butter, in a frying pan; let only 1 side brown. Now pour over the onions and butter, 1 tablespoon lemon juice or vinegar, 3 tablespoons beef gravy or Liebig's extract, 4 tablespoons of tomatoes just out of the can, and the liquor from 1 pint of oysters. Sprinkle bread crumbs over the top, and here and there put bits of butter. Set the platter in the oven over a pan of hot water, to prevent the dish from breaking, and bake till the crumbs are brown. Season 1 pint of raw oysters with red pepper, salt and lemon juice; put them in a saucepan, and let them cook until they puff up. Shake the pan to keep them from burning, and when done, pour them around the fish. Shrimp or mushrooms may be used instead of oysters.

Fish Balls.—Take 1 cup salt fish which has been picked in pieces and freed from bones, 2 cups potatoes peeled and quartered, and $1\frac{1}{2}$ quarts boiling water; put all together in a pan, and boil until the potatoes are soft, but not till they are soggy. Then drain off the water, mash and beat till soft and smooth, and add a little pepper, 1 teaspoon of butter, and, when slightly cooled, 1 well-beaten egg, with more salt, if there is not enough. Shape into balls with a tablespoon, and fry about 1 minute in smoking hot fat; on taking out, lay them on soft paper to drain. Excellent. The mixture can also be fried in a frying-pan, with salt pork fat, till brown, if desired, and turned out like an omelet.

Fish Chowder.—Take 3 lbs. cod or haddock cut in pieces, 1 small onion, 2 pints sliced potatoes, $\frac{1}{2}$ lb. fresh Boston crackers (if stale these will spoil the chowder), $\frac{1}{4}$ lb. salt pork cut in thin slices, 2 heaping tablespoons of flour and 1 of butter, 4 cups milk. Fry the pork brown (but do not burn it) in a deep kettle; on the pork put a layer of the fish, then a layer of potatoes well dredged with flour, pepper, salt, and a little of the onion; repeat till the ingredients are all used; then pour over hot water not quite to cover. Heat the milk in another saucepan and when the potatoes are tender, add to the chowder with the butter; have the crackers split, soaked a few minutes in warm milk or water, and add them also; boil up once and the dish will be done; the broth should be about as thick as thin cream soup. A good way to serve it is to put the fish and potato on a large platter, with the crackers in a circle around, and then strain the broth and put it in a soup tureen. This will make an entire dinner of itself (soup, fish and vegetables), adding, to finish, a simple dessert or a little fruit.

Creamed Fish.—Boil 3 lbs. of cod or haddock in salted water, with $\frac{1}{2}$ table-spoon of vinegar; when cool, remove the skin and bones, and separate the fish with a silver fork; season well with salt and white pepper. Make a cream sauce by putting into a saucepan 2 tablespoons each of flour and butter, the juice of $\frac{1}{2}$ lemon, and 1 teaspoon salt; mix well, and gradually add 2 cups hot milk. Put a layer of the fish on the platter in which it is to be served, sprinkle on finely chopped parsley, and cover with the cream sauce; then repeat the process. Moisten in melted butter, bread crumbs which have not been sifted, spread them over the top, and set the platter in the oven over a pan of hot water, to prevent it from breaking, and bake till the crumbs are a delicate brown.

Anchovies.—These are small fish caught in the Mediterranean sea, and put in salt for the market. They are used for relishes like sardines, and in compound-sauces for meat and other fish.

Blue-fish.—This can be baked with a dressing of bread crumbs and seasoning, or simply seasoned with salt and pepper; bake until a nice golden brown. This is a delicious fish and may be served with any of the fish sauces liked best. It can be boiled or cut in steaks and fried in salt pork fat in the frying-pan, or cut in pieces and fried in hot fat until of a rich brown color.

Cat-fish.—They must be scalded with *boiling* water and the skin removed; cut down the back and cut in pieces as large as the hand; then fry as directed for frying fish.

Codfish.—*Codfish Balls.*—Take equal parts of nicely picked codfish, mashed potatoes, and boiled red beets chopped finely. Mold into balls, brown in hot fat of salted pork, and garnish with the crisp bits of fried pork.

Escaloped Codfish.—Mix 2 cups of mashed potato with $1\frac{1}{2}$ cups of cold boiled codfish picked in small pieces, $2\frac{1}{2}$ cups of sweet milk and butter the size of an egg; put this in a pudding dish nice enough to set on the table, and bake a light brown.

Escaloped Codfish, No. 2.—Freshen the fish and pick it fine and light; make a thickened milk gravy, and when scalded, stir in 2 beaten eggs. Into a pudding dish put a layer of codfish, then a layer of bread crumbs; moisten with the sauce, and season with pepper, salt and bits of butter. Put in alternate layers of codfish, crumbs, etc., until the dish is full, finishing with crumbs. Bake it in the oven as you would escaloped oysters.

Codfish Toast.—Shread 2 teacups of nice salt codfish, and soak it in cold water over night. In the morning thicken 1 quart of milk slightly with flour, add 1 well-beaten egg, and boil $\frac{1}{4}$ hour; then add the codfish (which should have been well drained in a colander) let it boil 5 minutes longer, and spread it over nice, well-buttered toast; serve hot.

Eels.—Skin them, wash, cut into lengths 3 inches long, wipe dry, sprinkle on pepper and salt to season, roll them in flour, or egg and bread-crumbs, and fry in hot fat. Serve with tomato, pickle or any acid sauce. They can also be broiled, boiled or stewed.

Frogs.—The hind legs only are used. Skim and put them for 3 minutes in boiling salted water containing a little lemon juice; then drain and wipe dry. Fry the fat from 2 or 3 slices of thin salt pork; dip the frogs' legs in beaten egg and then in flour, and fry a delicate brown. Or dip them in bread crumbs, then season with pepper and salt, dip in beaten egg, then in bread crumbs, and fry a golden brown in smoking hot fat. If preferred, they can be broiled; or stew

them in a little water seasoned with salt, pepper and herbs; stew until tender, then let the water boil out, put in a bit of butter and let them brown. Serve with parsley, water-cresses or pepper-grass and lettuce. Frogs' legs are also made into a broth the same as chicken broth.

Seventy years ago, Charles Lamb wrote to a friend: "Since I saw you I have been in France and have eaten frogs, the nicest little rabbit things you ever tasted. Pick off the hind-quarters; boil them plain, and serve with parsley and butter."

Halibut, Pickled.—Take a piece of cold boiled halibut, put it in a bowl and pour over it hot vinegar, in which has been boiled a little red pepper and one blade of mace; let it stand 2 days before using.

Halibut Steaks.—Fry the fat thoroughly from 4 thick slices of clear salt pork; take out the pork when crisp; roll the steaks in flour or yellow corn-meal, and put in the pan; fry over a hot fire, but do not scorch; when done on one side, turn carefully with a fish, or pie knife, and when done, have both sides a golden brown. Place the fish on a platter; send to the table, with cream gravy made in the pan after taking up the fish. Serve with cucumber pickles.

Creamed Salt Mackerel.—Soak the fish over night, and wipe dry the next morning; heat the gridiron, butter it, and broil the fish over a clear fire; lay it on a hot platter while you make a sauce as follows: Heat 1 cup of milk to near boiling, and thicken it with 2 teaspoons of corn-starch rubbed smooth in 2 teaspoons of butter; add salt, pepper, a little chopped parsley, and when taken from the stove and partly cool, stir in 1 beaten egg; then pour it over the fish and serve. A nice breakfast dish in hot weather.

Fish Roes.—The hard, yellow, granular roe is the spawn or eggs of fish, and the soft, whitish roe is the milt. For *frying* (either the hard or the soft) wash them, then parboil by putting them for 10 minutes in boiling salted water containing 1 tablespoon of vinegar; then take out, plunge in cold water, drain, egg and bread-crumbs, and fry in hot fat till a nice brown. They are also sometimes *sautéd* or fried in a frying-pan, being first cut in slices $\frac{1}{2}$ inch thick and egg and bread-crumbed.

Fish Roes, Baked.—Parboil them in slightly salted water for 10 minutes; then drain them on a cloth, lay them on thin slices of breakfast-bacon in a baking-tin, place thin slices of bacon over the roe, and set it in a hot oven until the bacon is baked crisp and brown. Serve with any one of the fish sauces preferred.

Fish Roes, Boiled.—Boil them in slightly salted water for 30 minutes; if small, they will cook in less time. Do not let them break in pieces. In the meantime make a nice butter gravy, add to it a very little chopped parsley, and pour it over the roe, after placing in on a hot platter.

Fish Roes, Broiled.—Parboil the roes for 10 or 15 minutes in slightly salted water to harden them, drain on a cloth, and wipe them dry; dip in beaten egg, roll in cracker-crumbs, and broil over a clear fire of coals until well browned on both sides; place them on a hot platter, spread them with butter, or pour over them any fish sauce preferred.

The fecundity of fish has always excited the wonder of naturalists. The males have the *milt*, and the females the *roe*. The greater number deposit their spawn in the sand or gravel, but some of those who dwell in the depths of the ocean attach their eggs to seaweeds. According to Lewenhoeck, the cod annually spawn upwards of 9,000,000 of eggs; the flounder 1,000,000, the sturgeon 700,000; the perch 400,000; the mackerel 500,000; the herring 10,000. Fish roes form a cheap and appetizing dish for those who like them.

Salmon Cutlets.—Cut slices of salmon $\frac{1}{2}$ inch thick, remove skin and bone, season with salt and pepper, sprinkle on flour, dip in beaten egg, roll in bread crumbs, and fry in hot fat. Or they can be fried in a frying-pan.

Salmon Steaks.—Salmon steaks are good broiled and served with piccalilli

heated and piled in the middle, and with a hot sauce poured round, but not over the fish. A very simple but delicious way of cooking salmon is to cut it in slices, and grill it, serving it at once with a good squeeze of lemon juice, and a dust of cayenne on each side. *Large trout* cooked in the same way are equally good.

Salmon Toast.—Soak 2 oz. of bread crumbs in cold milk, and mix with a can of salmon which has been worked to a paste. Add the beaten yolks of 2 eggs, season with salt, pepper, a little nutmeg, and the grated peel of $\frac{1}{2}$ a lemon. Put into a dish, and on top place beaten whites of the eggs. Bake in a moderate oven, and when the top is slightly brown, it is ready to serve.

Canned Salmon.—A good way to serve it for breakfast, is to heat it, add pepper and salt to season, and serve on slices of toast, pouring over milk thickened with flour and butter.

Another way to use canned salmon is to put the can for about 20 minutes in a kettle of hot water; then turn it into a dish, and pour on drawn butter, to which finely cut hard boiled eggs and chopped parsley has been added; eat with mashed potatoes.

Sardines.—Take 3 eggs, 3 sardines, 3 slices of buttered toast. Bone the sardines and pound them in a mortar with a pinch of salt, a little pepper, and cayenne. Spread this paste on the hot buttered toast. Heat half a pint of cream, and, when hot, add the eggs well beaten with a Dover beater. Stir well until almost boiling; then pour it over the sardines and toast, and send to the table. Sufficient for 3 persons.

To serve sardines, the oil can be drained from them, and then place them on any small ornamental dish. Some people cover them with fresh olive oil, and others do not, as tastes differ. They can be garnished with parsley, pepper-grass or lettuce. Set a dish of quartered lemons near them.

Sardines belong to the same order as the herring. They abound in the Mediterranean, and are also found in parts of the Atlantic. They appear in shoals, are caught with nets, and are salted, dried, soaked in boiling oil and put into boxes and covered with oil. A good many of the fish sold as sardines are really sprats, cured and preserved in the same way. A variety named anchovy sardines are sardines that have been cured in red wine. Sardines are very wholesome, and furnish an agreeable addition to the table.

Shad.—Many people prefer this fish baked. Stuff and bake it as directed for baking fish. It will take from 1 to $1\frac{1}{4}$ hours to bake.

Dressing for Baked Shad.—Boil up the gravy in which the shad was baked, put in a large tablespoon of browned flour which has been wet with a little cold water, and the juice of 2 lemons. Pour it around the fish after it is placed on the platter, or serve it in a sauce-boat.

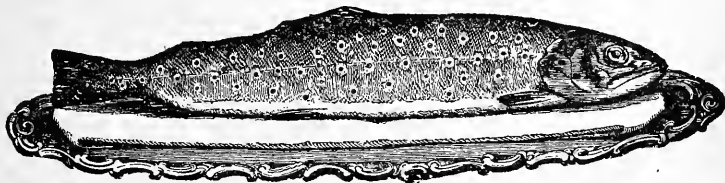
Smelts, Baked.—This delicious little fish is of a fine silvery appearance, with a light fawn-colored shade on the back, and when fresh, has an odor resembling cucumbers. Wash and dry them with a cloth; arrange them in a buttered flat baking dish; cover them with a layer of fine, fresh bread crumbs, first sprinkling the fish with a little salt and white pepper; place bits of butter over the bread-crumbs and bake until a nice brown, say 20 or 30 minutes. Send to the table in the dish in which they were baked; squeeze the juice of a lemon over them just before sending to the table.

Fried Smelts.—They may be fried in a little butter after the manner of cooking small trout, or in the fat of a slice of salt pork; or they may be strung, 6 on a wire skewer, dipped in egg and then cracker crumbs, and cooked in boiling fat like doughnuts. Smelts, small trout, and all small pan-fish, are better dressed with scissors than with a knife.

Brook Trout, Broiled.—Split the fish open, take out the backbone; have melted butter ready, seasoned with salt and pepper; dip the trout in it, and broil to a nice brown in a wire broiler.

Brook Trout, Fried.—Scald them in boiling water; then take off the skin, and take out the backbone; have beaten egg ready, seasoned with salt and pepper; dip the fish in it, roll in flour and fry to a nice brown in butter or oil.

Lake Trout (Muskallonge).—This should be cut in pieces of the size to serve at the table, then rolled in cornmeal and fried in a kettle of hot fat like doughnuts, until they are a rich golden brown. It may be cut in slices and fried in the frying-pan in salt pork fat, and garnished with the crisp slices of pork. It is also nice stuffed and baked.



BOILED TROUT.

Trout au Bleu.—Take some freshly caught trout; clean and wipe them; put them in a sauce-pan, and pour over them a pint of boiling vinegar, which immediately turns them blue; then add a pint of water to cover the fish; add 4 bay leaves, salt and pepper, an onion stuck with cloves, the peel of a lemon, half a head of celery, a carrot, and a small bunch of parsley; cover and boil $\frac{1}{4}$ hour. Serve with fish sauce, or oil and vinegar.

Turbot.—**Boiled Turbot.**—Let it soak in salted water 3 or 4 hours before dressing, to remove the slime. Then clean well, but do not cut off the fins; make an incision down the back to prevent the skin on the belly from cracking when it begins to swell in cooking; rub well with the juice of a lemon and a little salt, and boil as directed for boiling fish. As soon as it is done, drain, garnish and serve.

Fried Turbot.—Cut some remnants of boiled turbot into neat pieces, steep them in a marinade of lemon juice, oil, pepper and salt for 1 or 2 hours, then dip them in batter and fry them a golden brown in plenty of hot fat.

Salt Fish.—Salt fish may be soaked over night, changing the water in the morning; always put it in the water flesh side down. Salt being heavy, will be kept in the fish if the thick skin is on the under side while soaking. Salted salmon may be freshened by putting it in sweet milk, and letting it stand until the milk is sour. Salt fish that has been soaked in several waters does not need much boiling, 5 or 10 minutes after it is picked in pieces is enough—too long boiling hardens it and renders it indigestible. Milk, either sweet or sour, is one of the best things to soak salt fish in to freshen it. Salt fish should never be chopped; it should be picked into small pieces. It can be reduced to fine threads by rubbing with a potato masher, and will then mix with any other ingredients more readily than when chopped.

Remnants of Fish.—**Fish Cakes.**—Take the remnants of any cold fish, pull them to pieces, and thoroughly incorporate with them a small piece of butter and some mashed potatoes; season the whole with pepper and salt to taste, and a lit-

the cayenne if desired. Form the mixture into cakes, and fry in butter till of a golden color. Serve garnished with parsley.

Escaloped Fish.—Into a baking dish put alternate layers of sliced or mashed potatoes, and any remnants of broiled, fried or baked fish left from dinner; season with parsley, pour over a cream sauce, and bake in a hot oven $\frac{1}{4}$ hour.

Fish Pie.—Take any cold fish left from dinner, pick in small pieces, carefully removing every bone, and season to taste. Have a kettle of hot mashed potato, put half the potato in the bottom of a pudding dish, then spread on it the fish and cover with the remainder of the potato. Smooth over the top, and brown in the oven 10 minutes. Cheap and good for supper or breakfast.

Fish and Oyster Pie.—Take any remains of cold fish, such as cod or haddock, 2 doz. oysters, pepper and salt to taste, bread crumbs sufficient for the quantity of fish, $\frac{1}{2}$ teaspoon grated nutmeg, and 1 teaspoon finely chopped parsley. Clean the fish from the bones and put a layer of it in a pie dish, which sprinkle with pepper and salt, then a layer of bread crumbs, oysters, nutmeg and chopped parsley, and so on until the dish is quite full. You may form a covering either of bread crumbs, which should be browned, or puff paste, which should be cut off into long strips and laid in cross-bars over the fish, with a line of the paste first laid round the edge. Before putting on the top, pour in some melted butter, or a little thin white sauce, and the oyster liquor, and bake. Time—if of cooked fish $\frac{1}{4}$ of an hour; if made of fresh fish and puff paste, $\frac{3}{4}$ of an hour.

Re-dressed Cold Fish.—Cut the fish into square pieces, and lay them neatly in a flat dish; then cover them with mayonnaise sauce, and garnish with sliced beet-root and parsley. White fish or salmon may be dressed in this way.

Potted Fish.—Clean the fish, skin it, remove the larger bones, and cut it in pieces. Mix together 3 tablespoons each of cloves, allspice and peppercorns, 1 saltspoon of cayenne, and $\frac{1}{3}$ cup of salt. Into a small stone jar (not earthenware) pack the fish in layers, sprinkling the mixture of spices between the layers. Put in vinegar enough to cover, tie a thick paper over the top, and bake 5 or 6 hours in a moderate oven. It will keep some time in a cool place (if kept under the vinegar), and can be eaten cold or hot, making a fine relish for tea or lunch. The bones will be dissolved by the vinegar.

SHELL-FISH.

Under the head of shell-fish we include oysters, clams, crabs, lobsters, shrimps, prawns, mussels, crayfish, scallops, and terrapin or turtle.

Of the shell-fish, oysters are the most valuable, not only for their flavor, but for the ease with which they can be taken by invalids, and for the nutritious qualities they possess. Lobsters and clams are more difficult of digestion, but are much liked by many persons. Lobsters and clams should be perfectly fresh, as many cases of illness have been caused by eating them after decomposition has begun. All shell-fish should be kept near ice both before and after being cooked, if there is a remainder after the meals, except in cold and freezing weather.

CLAMS.

Clams are good during the months when oysters are not in season—those without an “r.” If only eaten when fresh, they are wholesome.

Clams au Gratin.—Chop all the hard part of uncooked clams; to a cup of clams add a cup of fine cracker or bread crumbs, reserving a little for the top of the mixture before it is placed in the oven; add also to the chopped clams a dessertspoon of chopped onion, a small teaspoon of marjoram and sage, a little chopped celery, some cayenne and salt; moisten all with the broth of the clams; fill buttered shells with the mixture, sprinkle crumbs over the top, with some bits of butter, and place in a hot oven for 20 minutes; garnish with parsley when served.

Clam Chowder.—Take 1 quart of clams and chop them fine; 6 large fresh crackers, 1 onion, sliced, 6 potatoes, cut in dice. In an iron pot fry 2 slices of salt pork; take it out soon, leaving the fat in the pot; put in 2 or 3 slices of onion, then a layer of the potatoes, then a layer of the chopped clams, sprinkle well with salt and pepper; then a layer of the onion, then the bits of fried pork, cut into small pieces; add a layer of broken crackers; put in the remainder in the same way; then add the clam liquor, and enough water to more than cover them. Cook 20 minutes, or until the potatoes are done; add 2 cups hot milk just before serving. Sufficient for 8 persons.

Escaloped Clams.—Scald the clams, remove the hard part and chop the rest. Make a soup of the liquor, with enough water added to make it fresh enough; thicken it and make sufficiently rich with butter. Butter a scalloped dish, strew the bottom with bread or cracker crumbs, moisten them with the soup, then spread a layer of clams seasoned with pepper, and continue alternately till the dish is full, the last layer being crumbs moistened with soup. Bake $\frac{1}{2}$ hour, and serve at once.

Stewed Clams.—Chop the clams, and gently simmer them in their own liquor, over a slow fire, for an hour; then add salt, pepper, and bits of butter rolled in flour, and stir until it thickens. The flour being mixed with the butter will not cook in lumps. If the flavor of onions is liked, rub the platter with a raw onion. Cover the bottom of the platter with nicely browned halves of crackers, pour the hot stew over them, and send to the table.

Clams on Toast.—Take the clams out of the shell and cut their heads off; boil them in their own liquor; skim it well, and add as much water or milk as there is liquor; thicken with flour or powdered rice to the consistency of cream; add

butter, and pepper and salt to taste. Have some thin slices of buttered toast prepared, pour on enough of the liquor to soften the toast and lay 3 or 4 clams on each slice. Serve at once, on hot plates. Garnish with parsley. A teacup of hot water will "start the steam" for $\frac{1}{2}$ peck of clams; the amount of liquor which each shell contains will surprise the novice. As few like the liquor full strength, it is better to dilute it $\frac{1}{2}$, as above directed.

CRABS.

A crab of the medium size is the best, and the crab, like the lobster, should be judged by its weight. It should be heavy for its size, for if light, it is watery. They are called "soft shell crabs" when the new shell is forming, as they shed their shell annually. They are a similar shell-fish to lobster, and are prepared in the same ways for the table.

Browned Crabs.—Take the great shell, clean and butter it; mince all the fish, shred some parsley, mushrooms, truffles, and a small onion. Brown these in a sauce-pan with a very little butter; put in the minced crab with the inside bruised, and some cayenne pepper and salt; stir this about, shake in some flour, and add a little coral. Let this simmer up, fill up the shell, strew over crumbs of bread with a small piece of butter; brown in a hot oven.

Deviled Crabs.—Boil the crabs, take out the meat and chop it fine; then add $\frac{1}{2}$ as much bread crumbs, cream or a cream sauce, salt, pepper, cayenne, mustard and lemon juice. Clean the shells, fill them with the mixture, dust them with cracker crumbs, and bake them brown in a quick oven. Deviled crabs should always be seasoned high.

Escaloped Crabs.—Take the meat of boiled crabs, chop it fine; add cream or cream sauce, chopped hard-boiled egg, pepper and salt to season, and a little lemon juice. Clean the shells, put in the mixture, dust on bread crumbs, and bake brown in a quick oven.

Fried Soft Shell Crabs.—Remove the sand bags, etc., wash and dry them; sprinkle on pepper and salt, roll them in flour, then in egg, then in bread or cracker crumbs, and fry in hot fat.

Kromesbies of Crabs.—Boil for 40 minutes, 1 or more crabs; when cool, pick them out in as large pieces as possible. Mash fine the hard-boiled yolks of 4 eggs, add them to the crabs, with 1 tablespoon of chopped parsley, 1 whole egg well beaten, and a palatable seasoning of salt and cayenne. Mix carefully, and form into tiny rolls; wrap each in a very thin slice of bacon, dip it in fritter batter, and fry in smoking hot fat. Serve on a napkin; garnish with cress.

CRAY-FISH, PRAWNS AND SHRIMPS.

These are much like lobsters, only smaller, and they are to be found in provision stores in hermetically sealed cans, already cooked, and the meats picked from the shells. They are used whole and boiled for garnishing boiled fowls and all kinds of boiled fish. They are boiled in the same manner as lobsters, but for a much shorter time, from 5 to 15 minutes being the rule. After boiling, they may be broken in pieces, shells and all together, and form a foundation for a delicious soup, with any additions preferred.

These shell-fish make ornamental side dishes, served whole, and garnished with parsley and nasturtiums.

Buttered Shrimps or Prawns.—Pick 1 pint of shrimps or prawns, and put them in a stew-pan with $\frac{3}{4}$ pint of bouillon; add a thickening of butter and flour; season to taste with salt, cayenne and nutmeg, and simmer gently for 3 minutes. Serve on a dish garnished with fried bread or toasted sippets. Cream sauce may be substituted for the gravy.

Curried Cray-fish, Prawns and Shrimps.—For a can of these shell-fish, melt a small cup of butter in a pan; add a saltspoon of curry-powder, a sour apple chopped finely, the juice of a lemon, and $\frac{1}{2}$ pint of hot water; a small onion may be added if liked. When all the ingredients are well scalded together, add a tablespoon of corn-starch wet with a little water, and stir until it thickens; add the can of shell-fish to the curry sauce. Let it get quite hot—do not boil—then serve.

Potted Cray-fish, Prawns or Shrimps.—Pick the meat from 50 cray-fish and pound it to a paste in a mortar; season with salt, pepper, a little nutmeg, and a piece of butter the size of an egg. The butter must be slightly softened, but not melted, and the ingredients should be thoroughly mixed. Put it in small earthen pots, pack tightly, and cover with salad oil; then cover in such a way as to entirely exclude the air. The earthen pot can be had of apothecaries, with the covers; the potted cray-fish should be kept in a cool, dry, dark place.

Prawns and shrimps may be potted in the same manner.

LOBSTERS.

The largest lobsters are not as good as those of a medium size, and those full of eggs are inferior. Lobsters should be put in cold water to boil, for they are dead as soon as the water becomes warm, and suffer less than when plunged into boiling water; they are done when they have boiled about 20 minutes. Lobsters are not poisonous if perfectly fresh; there is no poison "lady" in the lobster. The stomach near the head is, of course, taken out, and also the "string" or intestine which goes through the lobster; all the rest is edible. The green tomally or liver can be eaten, and do not waste the sweet meat between the bones of the body. Lobsters that were alive when put into the water to boil, will have the tail curled up, while one that was dead will have the tail extended. Long or slow cooking will toughen lobsters and make them indigestible. Brushing the large shells on the outside with olive oil, is thought to preserve the bright red color. Cayenne pepper, mustard, vinegar or lemon juice, should be eaten with lobsters; they are digested with difficulty.

To kill a lobster quickly and easily, cut the spinal cord by pushing a long, narrow-bladed knife into the tail, slanting the blade downward, and inserting it at the third joint, counting from the end.

Lobster coral can be kept a long time if put in a jar or bottle and covered with vinegar. To use, soak about an hour in water, and then in milk for the same time; wipe dry, and use like fresh coral. During the season it is well to preserve surplus coral in this way, for coloring soups, etc.

Lobsters Au Gratin.—Split the tail and body of the lobster, removing the fish and taking care not to break the shells; mince the fish, and put all into a stew-pan with a little good stock, and pepper and salt; mix it well, fill the shells with the mixture, cover them well with bread crumbs, brush over with clarified butter, and brown it in a hot oven.

Broiled Lobster.—After being boiled, a lobster may be broiled as follows: Take the claws off and crack them, split the body and tail in two, season well with pepper, salt, and cayenne, and broil. Serve with plain butter, or with a little heated catsup, dashed with Worcestershire sauce.

Buttered Lobster.—A buttered lobster should be first boiled and broken up. Take out all the meat, cut it small and put it in a stew-pan with plenty of butter, a little pepper, salt, and vinegar, and stir till it is hot. If a handsome dish of 2 or 3 lobsters be desired, the tails should be halved and broiled, and put round the dish with the minced lobster in the middle.

Lobster Canapés.—For this, there must be the meat of a medium-sized lobster, cut in small pieces, and mingled with the green fat; pour over it a very little

salad oil and vinegar, just enough to moisten it well, and let it stand 10 or 15 minutes. Cut thin slices of bread for the croutons, trim off the crust to make them square, or cut them with fancy-shaped cutters, and fry them a delicate brown, on a griddle well buttered; spread the croutons on a platter garnished with parsley; on the croutons spread the lobster, and on the lobster may be placed thin slices of lemon, or sprinkle them well with capers.

Lobster Creamed.—Chop finely a medium-sized lobster and pour over it a pint of cream; put in a cup of bread crumbs, and 3 eggs well beaten, with a little salt and pepper; butter a mold, fill in the mixture, invert a plate over the top, and steam for an hour. Serve with any nice fish sauce.

Lobster Curry.—Put $\frac{1}{2}$ cupful of butter in a frying-pan, and when melted, stir into it 2 tablespoons of flour and 1 heaping saltspoon of curry powder; stir constantly until it is brown; then gradually add $\frac{1}{2}$ pint of hot water, stirring rapidly until it thickens; season with salt to taste. Chop coarsely the meat and fat of a medium-sized lobster, and add it to the curry sauce; simmer 5 or 6 minutes, or until it is quite hot; if onion is liked, rub the hot platter with a raw onion; place on the platter slices of nicely-toasted bread, and pour the curried lobster over the toast. Serve hot.

Deviled Lobster.—Cut lobster fine, and season it highly with salt, cayenne, mustard, chopped parsley, onion juice, if desired, and some pungent sauce, like Worcestershire; place the mixture in the lobster shell, sprinkle bread crumbs over the top, with bits of butter, and bake till brown on top. Eat hot or cold.

Lobster Patties.—Chop a medium-sized lobster very finely, and mix with it the juice of a lemon, a little salt, and white pepper, and salad oil enough to moisten it, if not moist enough; line patty-pans with puff paste and put into each a small piece of bread; put on a top crust of paste, brush over with beaten egg, and bake; when done, take off the top crust, remove the bread, fill the patties with the minced lobster (after stirring it over the fire with the seasoning for 3 or 4 minutes); then replace the top crusts.

Stewed Lobster.—Cut the lobster small and put it in a stew-pan, and add just a little water, milk or cream, the latter being best, although the first will answer; let it boil up, add a teaspoon of butter, and pepper and salt to season, and serve hot, either on toast or plain.

MUSSELS.

These cheap and excellent shell-fish are sometimes called the poor man's oyster. They are sometimes eaten raw, but it is better to cook them. They can be fried, broiled, stewed, or pickled, being usually prepared for the market by pickling. The "moss," or byssus, which serves to attach them to rocks, etc., is usually removed, being considered poisonous, although there is no proof of that. Still, it is better to remove it after being boiled and before serving them.

Boiled Mussels.—Clean the shells and put them in a kettle with water slightly salted and containing a little vinegar; heat until the shells open and they are done. Remove them from the shells, trim off the "moss," strain the liquor, add a little flour, the yolks of 1 or 2 eggs, pour over the mussels and serve at once. Chopped parsley may be added if desired.

OYSTERS.

Oysters are only good during the months containing an "r" (that is, from September to April) as their multiplying season is during the warm weather, and at that time they are soft and tasteless. They are not easily kept in warm weather, being a fish that quickly spoils. Canned oysters can be used in hot weather if liked, for they are only canned in their season. In cooking oysters, great care

should be taken, that they may not be cooked too long, as that process hardens them. They are easily digested and are commonly given to invalids, although cooking renders them a little less digestible; if too much cooked, they are tough and leathery. Always buy the "solid" oysters, or those containing very little juice, as they are sometimes watered and it is more economical to water them yourself. The smallest oysters are used for stews and escalops, and are sold by measure, as are the "straights," that is, the large and small mixed. The largest oysters are usually sold by the dozen for broiling and frying; they are called "counts," and "selects."

Never salt oysters until just before serving, as cooking them with salt hardens them. They should be served at once after being cooked. Be sure that all bits of shell are removed before cooking. Do not open them until just before using if wanted raw; if to be cooked, do not keep them long after being opened. As the crabs are usually regarded as a delicacy, save any which are found among the oysters. As oysters in cooking produce liquor enough of their own, there is less need of saving their liquor.

Broiled Oysters.—Take as many large oysters as are needed, dry them in a towel, rub butter on the bars of a wire gridiron, brush a little over the oysters, and broil over a clear fire. If the wires of the gridiron are close together, smaller ones can be broiled. Arrange them on toast, season and serve. Or they can be dipped in melted butter, then rolled in crumbs which are seasoned with pepper and salt, and broiled until the juice flows; this saves the juice more and many people prefer it.

Creamed Oysters.—Cook 3 tablespoons of flour and 2 tablespoons of butter together until they bubble; add 1 cup milk and 1 cup of oyster liquor, and stir until you have a thick sauce; into this drop 1 quart of oysters freed from their liquor. Have ready an egg beaten light in a cup, mix some of the hot sauce with it, turn all back into the saucepan, stir 1 minute (not longer) and take from the fire. Season with salt, pepper and the juice of half a lemon. Serve on toast, or put the creamed oysters into buttered scallop-shells; sprinkle with crumbs, dot with butter, and brown in a quick oven. Eat hot.

Deviled Oysters.—Drain the oysters and dry in a clean towel; then put them in a dish, and cover with a mixture of melted butter and vinegar or lemon juice, adding a little pepper sauce or cayenne pepper if desired; let them soak 5 or 10 minutes and take them out; dip them in fine cracker crumbs, then in beaten egg, and again in crumbs, and fry in smoking hot fat.

Escaloped Oysters.—Roll 1 quart of crackers fine with the rolling pin. Grease the baking dish as you would before baking a cake in it. Put a layer of cracker crumbs in the dish; drain the liquor from the oysters and add twice the quantity of milk to it; moisten the crumbs with some of this, then put in a layer of oysters with a seasoning of salt, pepper and bits of butter. Put in the layers of crumbs alternately with the oysters in this way until all are in, with a layer of crumbs and bits of butter on top. Beat 1 egg and add to it the remainder of the milk and oyster liquor, or if none remains, add a little milk to the egg and pour it over all. Put a cover over it and bake $\frac{1}{2}$ hour; then remove the cover and bake $\frac{1}{2}$ hour longer.

Fried Oysters.—Take large sized oysters, parboil slightly, drain, sprinkle with pepper and salt and cool 20 minutes. Then roll each one separately in bread crumbs, then in beaten eggs and milk mixed, then again season, and again roll in bread crumbs. Put into boiling hot lard and fry 1 minute; take out, lay on paper to absorb surplus grease, garnish and serve.

They can also be fried in the frying-pan. Prepare as above, roll in cracker crumbs only, and fry on each side until brown, using butter for the fat.

Fricassee of Oysters.—Put about 75 oysters on the fire in their liquor and an equal quantity of chicken broth; add the juice of 1 lemon, and when all comes to a boil, remove from the fire; in another stew-pan put a tablespoon of butter, $1\frac{1}{2}$ tablespoons of flour; stir them together carefully so as not to color; add, slowly, the liquor and oysters from the other stew-pan, then the beaten yolks of 4 eggs, 1 saltspoon of white pepper and salt mixed, 1 tablespoon of chopped parsley; let the mixture become thoroughly hot, but do not boil; serve as soon as possible.

Oyster Fritters.—Have ready a batter made as follows: Dissolve 1 heaping tablespoon of butter in 4 tablespoons of water or oyster liquor, and stir to this $1\frac{1}{2}$ tablespoons of sifted flour; mix well over the fire. Take it off and mix in, one after the other, 3 eggs, and a little salt. Beard and scald the oysters, dip each into the batter, fry lightly in smoking hot fat, and serve.

Oysters On the Half Shell.—Do not open them until just before they are served, and then leave each one in half the shell. Allow about $\frac{1}{2}$ doz. large oysters for each guest. Put them on a dinner plate, and in the center of the dish put 1 or 2 slices of lemon cut thin.

Oysters and Macaroni.—Take some macaroni, boil until soft, put a layer into a baking dish, then put in a layer of oysters; season with salt, pepper and butter, and so on with alternate layers of macaroni and oysters, until the dish is full. Then bake till brown, and serve.

Oyster Omelet.—Beat the yolks and whites of 6 eggs separately; to the yolks add $\frac{1}{2}$ cup of rich milk or thin cream, a little salt, and 12 oysters, chopped fine. Put butter in your frying-pan, as for an ordinary omelet, and allow it to heat while you are mixing the whites of the eggs with the rest of the ingredients. Mix the whole lightly and turn into the pan. Shake to prevent burning, and as soon as the omelet is set, or begins to be firm, turn one half over the other half quickly, slip on to a hot platter and serve at once. Good, but not as economical as many dishes.

Panned Oysters.—Remove the crust from thin slices of stale bread, toast it, cut it in pieces, and fit them into muffin or patty-pans; moisten with oyster liquor; put oysters on the toast, sprinkle with pepper, and put a bit of butter on each one; cover with a dripping-pan, or any convenient cover to prevent the escape of steam, and cook in a quick oven; they will be done when the oysters curl (in 6 or 8 minutes). Then sprinkle with salt, and serve hot.

Oyster Patties.—Make a rich puff paste and bake it in earthen sauce-dishes. Wash nice fresh oysters in warm, salted water; drain and put in a sauce-pan, with a piece of butter, a little salt, pepper, and nutmeg, if liked. Cook them only until they are plump, stirring with a silver fork while plumping; when cold, fill the crusts and send to the table. If liked hot, the crusts can be filled before baking with the plumped oysters, and sent from the oven to the table.

Oyster Pie.—Line a deep pie-dish with puff paste; dredge with flour; pour in 1 pint of oysters, season with butter, salt, pepper, and sprinkle a little flour over the oysters; pour on some oyster liquor and cover with a crust, with a hole in the top for steam to escape. Bake 30 minutes.

Pickled Oysters.—Put 100 oysters in a sauce-pan, and let them simmer gently in their own liquor for about 10 minutes; take them out one by one, put in jars, and when cold, cover with a pickle made as follows: Measure the oyster liquor and add to it the same amount of vinegar, and for each cup of vinegar, add 1 blade of pounded mace, 12 cloves, and a strip of lemon peel; boil 5 minutes, and when cold, pour over the oysters and cover closely.

Figs in Blankets.—Choose large oysters, season with pepper and salt; wrap each one in a slice of bacon cut very thin, and fasten with a wooden toothpick. Cook in a hot frying-pan just long enough to crisp the bacon. Have small pieces of toast ready, put each "pig" on one, without removing the skewer; serve at once.

Raw Oysters.—In cold weather these are much better to lie a short time in warm salted water; this takes the chill from the juice of the oyster, and they are more agreeable than when very cold, as they will be in winter. They may be eaten with just salt, pepper, and vinegar, but some persons like them served with one of the appetizing sauces. Nice bread and butter sandwiches are good with raw oysters.

At large dinners where raw oysters are served, they are sometimes brought to each individual place before the company is seated. It is a pleasant and home-like way for the host to serve them from a platter before him, on small dessert-plates. Drain the oysters well, arrange them on a platter, sprinkle with salt and pepper and slice lemon over them. Thin slices of buttered brown bread may be served with the oysters. Let them stand in the ice chest $\frac{1}{2}$ hour before serving.

Steamed Oysters.—Drain them, lay on a plate and set in the steamer, and steam for about 10 minutes till they look white and plump. Use the liquid for a dressing; beat it, mix with an equal quantity of cream, and thicken it with a little corn-starch.

Oyster Stew.—Put the liquor from 1 pint of oysters with 1 cup of sweet milk in a kettle; let it just boil, add the oysters and let it boil up once; then season with pepper, salt, and butter, with a few crackers toasted and broken in pieces. Never salt oysters until just before removing from the fire, or they will shrivel and harden.

Smothered Oysters.—Put a piece of butter the size of an egg into a saucepan, with a little salt, white pepper and cayenne. Have ready a pint of oysters, which have been washed in warm water slightly salted, and thoroughly drained and dried on a napkin; when the butter is hot, put in the oysters and cook them until they are plump (2 or 3 minutes); stir them carefully all the time with a silver fork to prevent them from sticking to the saucepan. Serve on toasted crackers.

Oyster Toast.—Chop fine $1\frac{1}{4}$ dozen good large oysters, and season with pepper, salt, and a dash of nutmeg. Beat together $\frac{1}{2}$ cup of cream and yolks of 2 eggs; heat the oysters till they simmer, stir in the egg and cream, and pour it on prepared slices of buttered toast.

Oysters Unshelled.—Take oysters in the shell; wash and scrub the shell till perfectly clean; then, to keep in the juice, set them with the round shell down. Either steam them in the steamer 10 to 20 minutes, or roast them over hot coals on a gridiron, or put them in the dripping-pan on top of the stove, or in the hot oven. They will be done when the shells open. Then take off the flat top shell, and season each one with a little butter, salt, pepper, and lemon juice. Serve hot. This method retains the natural flavor of the oyster better than any other.

SCALLOPS.

This fish somewhat resembles the oyster in appearance and the crab in taste. It is comparatively little known, although when fresh and well cooked it is very delicious. It is found in all parts of the world, and in ancient times the shells were used extensively in cookery, giving us our prefix of "scalloped." They are in season in fall and winter. The muscle by which it opens and closes its shell is

the only part eaten. They can be stewed like oysters, or fry them, which is a better way.

Fried Scallops.—Rinse them in cold water slightly salted, and dry in a napkin; dip them in cracker dust seasoned with pepper and salt, then in egg, then in crumbs again, and fry in hot fat. They are sometimes dredged with flour and fried in a frying pan with pork fat.

TERRAPIN OR TURTLE.

To dress terrapin, cut off the head and bleed thoroughly, then soak in cold water for an hour. Next boil 10 or 15 minutes, take it out into cold water and with a coarse cloth rub off all the black skin. Have another water heating in the kettle, and when the turtle is cleaned, boil until the shell loosens; the time will vary from $\frac{1}{2}$ hour to 2 hours, according to the age of the terrapin. When done, put in cold water again, take off the under shell and carefully take out the gall-sack and the liver and sand bag, and throw away the head. Be careful not to break the gall-sack, or the gall will escape and spoil the whole dish. Save the juice that runs from the meat, opening it over a bowl for that purpose. The eggs and meat are served in various ways. If made into a soup or stew, the eggs are put in and served with it; if served in other ways, the eggs are used with other decorations, as a garnish. In whatever way served, the meat must be cut finely.

Escaloped Terrapin.—Put a cup of butter in a sauce-pan, melt, and stir in 2 tablespoons of flour; then pour on a pint of hot water, stirring rapidly, to make a smooth gravy; pound the terrapin eggs to a paste and add with salt, pepper, and a trifle of nutmeg to taste; then strain. For a quart of finely cut terrapin, have a quart of bread crumbs made fine; put a layer of terrapin on the bottom of a pudding dish, then a layer of crumbs, then of sauce, and so fill the dish, having a layer of crumbs on the top. Add sweet milk enough to show through the top layer of crumbs if it is not sufficiently moist; put on a few bits of butter, and bake 20 minutes in a hot oven. Serve with slices of lemon.

Terrapin Stew.—Make a sauce as for escaloped terrapin; put in the meat, cut finely, and let it get hot, but do not let it boil longer than a minute. Add lemon juice to the stew if liked. Serve with croutons or toasted crackers.

SAUCES FOR FISH, SHELL-FISH AND MEATS.

It is of much importance that the cook should know how to make a good sauce for her meats, etc. A great deal of the elegance of cooking depends upon having the accompaniments of each dish appropriate and well adapted to it. The most homely fare may be made relishing, and the most excellent improved, by a well made sauce. It may safely be asserted that a first rate sauce maker is also a good cook. Sauces are necessary in the most modest kitchen, and they are as easily made rightly as wrongly, if one only knows how, so that this branch of the art of cookery deserves very careful attention. A busy and economical housewife will sometimes say she has no time or money for sauces, when as a matter of fact she cannot afford to do without them, for, by using flavorings is the best way to induce the system to take plain food with relish; and when we say this, we are not unmindful of the old saying that "hunger is the best sauce." Animals certainly would hardly be considered over particular, and yet they have been known to starve in the experimenter's hands rather than eat a nutritious food from which the flavor had been extracted and of which they had become tired. We are convinced that poor people especially are too much inclined to neglect the very important matter of flavorings and relishes for their food.

The Utensils.—To make sauces successfully, proper utensils should be provided. The most essential are wooden spoons and round bottomed sauce-pans. It is very difficult to prevent lumps in a sauce if it has to be made with a pointed spoon and a flat bottomed pan. All utensils must, of course, be scrupulously clean.

Herbs, etc.—Do not be appalled at the number of ingredients, like thyme, mace, parsley, etc., called for in a recipe. A few cents will buy enough of all these things to last for a year, and the good cook aims to keep a small supply of all flavoring herbs on hand; but if you do not have them all, very good results may be produced with less.

Thickening.—The most common thickening for sauce is *flour*. The quantity generally used is 1 ounce, or a heaping tablespoon to a pint of liquid; though 2 or 3 times that is needed to make a sauce thick enough to adhere to what it is poured over. *Corn-starch* or *arrowroot* is often used instead of flour, and makes a smooth and more delicate sauce. All sauces containing flour or *any other form of starch* for thickening, must *boil*, and must be stirred *until* it boils, or the starch will settle to the bottom and make lumps, instead of thickening the whole. Although the starch swells, and thickens the liquid even before the boiling point is reached, even in this pulverized form the starch needs to cook 10 minutes at least, *to be made digestible*; it should be remembered that *all* starch needs at least that. There is some difference in the quality of flour and it does not thicken the same at one time as another. Dry flour must never be mixed with hot liquid unless it is intended to form lumps; but it must first be stirred to a smooth paste with cold liquid, and then the hot poured over it, or it must be mixed with a little melted fat over the fire when hot, or cold liquid can be gradually added. As a general rule, the following is the best way to mix all flour sauces: Melt the fat, stir in the flour, and when they are well mixed, and there are no lumps, add liquid gradually, on or off the fire, stirring continuously till all boils. Sometimes the flour is cooked in the fat until it takes a brown color, more or less dark. Sauces thus made have a fine flavor, and are smooth and free from grease. All the different kinds of brown sauces are made by using brown stock, browning the butter, and using various seasoning materials. As flour, when cooked into brown roux does not thicken quite as much as when uncooked, rather more is needed.

Eggs are also used to thicken sauces, sometimes the yolk only, sometimes

both yolk and white, and both with and without the addition of flour. They must be well stirred and never allowed to heat to boiling, as the yolk then hardens, and will not mix with the sauce; but they must be heated enough to slightly coagulate the albumen, or the sauce does not thicken. To pour boiling water very gradually over the eggs in a basin is often sufficient. The safest way to cook an egg sauce is in a basin or pitcher standing in a pan of boiling water, or in a *bain marie* made on purpose; but an ordinary sauce-pan can be used if care is exercised. On the least appearance of "curdling," the sauce should be lifted from the fire, poured into a cold basin, and stirred. Sauces are best cooked in a double boiler to guard against scorching them in the least, which should be carefully avoided.

About coloring for sauces, it may be said that they should as a rule be of some decided color. In order to get these decided colors, artificial coloring matter is often used. Brown is the most common and the most harmless, for it is produced by roasted flour, sugar or vegetables, which add to the flavor as well as appearance, if not carried to the point of burning. Onion skins contain much coloring of a harmless kind. Home-made brown roux is to be preferred to that which is bought, and is much cheaper. Milk, cream, or white stock are used in white sauces. Lobster spawn gives a brilliant scarlet. Spinach green is always harmless, and is the only green suitable for kitchen use, as many greens contain arsenic. Other harmless colors are given in our article on frosting for cake.

Good fresh butter only should be used for first rate sauces. Inferior or rancid butter should never be used; it is not as good as fresh beef dripping or fat. Where economy is studied, it is better to use less butter and have that good, than to buy a large quantity of cheap cooking butter. Meat should always be sufficiently fat to "cook itself," that is, it should furnish enough oil for the gravy—if it does not, it is poor meat. Good salad oil is much used in salads, and dishes made of dry cooked meats, as the gravy is mostly served with the hot meat at dinner.

Serve hot.—Gravies and sauces should be sent to the table very hot. Being made in small quantities, they are more liable to cool quickly than if they were in a larger body. If made before the moment of serving, they should be kept in a sauce-pan of boiling water; a fish kettle makes a good improvised *bain marie*.

Roux (pronounced Roo).—*Brown Roux*, for thickening gravies and sauces, is made by melting butter in a stew-pan and adding an equal quantity of flour. Stir constantly while it is browning, so that it will not burn; when of a nice yellowish brown, put it in jars, cover tightly, and keep it in a dry dark place. It is then ready to use at any time by taking 1 or 2 heaping spoonfuls, according to the quantity of soup, and stirring it in while the soup is boiling, and it will instantly thicken. This is the Brown Roux used by foreign cooks. *The White Roux* is made in the same manner, but only cooked together for a few minutes without browning. Many prefer the bits of butter rolled in flour, and used as occasion requires; then there is no danger of rancidity or waste, as there might be if a quantity of roux was prepared and it was not needed for use, as expected.

SAUCES.

Anchovy Sauce.—Take 1 cup of drawn butter sauce, and add 1 tablespoon of anchovy paste or extract.

Aspic Jelly.—Take a tablespoon of good extract of meat; put 2 quarts of water to it, and add a small onion cut finely, or a bit of garlic, a pinch of celery-seed, a sprig of thyme, a carrot cut finely, with the rind of a lemon, and a few drops of tarragon vinegar. Let all boil slowly together until the vegetables are soft. Have 2 large tablespoons of gelatine soaking in cold water enough to cover, and add when the vegetables are done. Stir in the softened gelatine until it is dissolved, and add the juice of the lemon, with the whites of 2 eggs slightly beaten; now let come to a boil, then set back on the range for 15 minutes. Strain through a jelly-bag until clear, pour into a mould, and place on ice. Aspic jelly is used as a garnish for various meat dishes. A plain lemon jelly made with gelatine, answers every purpose for decorations, instead of this elaborate jelly.

Bechamel or White Sauce.—Put $\frac{1}{2}$ a cup of butter in a sauce-pan and let it soften; mix with it 2 tablespoons of flour, then add 1 pint of milk; set the sauce-pan in a larger one containing hot water, stir constantly until it thickens, and let it scald; rub out the lumps, and season with pepper and salt. This can be used as a foundation for many other sauces. A few bits of celery, sprigs of parsley and a little nutmeg can be added, with a sliced onion, if desired, for flavor; scald 15 minutes, strain through cloth to remove the onion, etc., and send to the table. It is often made with $\frac{1}{2}$ milk and $\frac{1}{2}$ stock.

BORDEAUX SAUCE.

2 quarts of cider vinegar.	1 ounce of turmeric.	1 heaping tablespoon of salt.
2 quarts finely chopped green tomatoes.	1 teaspoon celery seed.	1 teaspoon of ground mustard.
2 quarts finely chopped cabbage.	1 teaspoon ground ginger.	1 teaspoon of ground black pepper.
	1 teaspoon ground cloves.	1 heaping tablespoon of sugar.

Mix all together and cook until soft, stirring often to prevent sticking to the sauce-pan. Cork tightly in wide mouthed bottles, and keep in a dry, cool place. A good meat sauce.

Bread Sauce.—Dry white bread or rolls thoroughly in the oven, but do not brown them; then roll on the moulding board, put it in the fine colander, and sift through the finer crumbs. Put the fine crumbs in a sauce-pan, and for each cup, add 2 cups stock or water, a slice of onion, with pepper and salt; simmer 20 minutes. In the meantime put a piece of butter the size of an egg in the small frying-pan, and when melted, add the coarser crumbs of bread; stir continually until they are a nice golden brown. Take the onion from the sauce, add the browned bread crumbs, and serve in a sauce-boat. This sauce can be made with fresh sweet milk instead of stock, and is served with game.

Brown Sauce.—Fry 1 tablespoon of chopped onion in 1 tablespoon of butter; let this brown, but not burn, and then add 1 heaping tablespoon of flour; stir thoroughly and then add (a little at a time) 1 cup hot stock, stirring rapidly until it is smooth and thick. Season to taste with pepper and salt, let it simmer 5 minutes; remove the onion by straining the sauce. Leave out the onion if its flavor is not liked. Color with caramel. This will serve as the foundation for many sauces by using various flavoring materials.

Drawn Butter Sauce.—Put 2 tablespoons of butter into a sauce-pan and melt it, but do not let it turn brown; then add 1 tablespoon of flour and mix well; then add (a little at a time) 1 cup of hot water, or white stock if you have it, stirring it thoroughly. When smooth, add 1 large tablespoon of butter, cut in pieces and stir it in thoroughly. Add pepper and salt to season, and strain it if not perfectly smooth. This can be used as the foundation for many other sauces. A few drops of lemon juice or vinegar can be added by those who want it acid, and a little finely cut parsley can be added also if desired.

Maitre d' Hotel Butter.—Melt a teacup of butter in a sauce-pan; stir into it a tablespoon of corn-starch, then a pint of hot water; stir well so that it will be smooth. Add the strained juice of a lemon, a saltspoon of cayenne; salt to taste and add 2 large spoons of chopped parsley. It is served with meat or boiled fish.

Butter, Montpelier.—Water-cress, fresh butter, pepper, or cayenne and salt are needed for this. Pick the leaves from the cress, which must be green and fresh, chop them finely, dry them in a cloth and mince again; then thoroughly mix them with fresh butter until it is of a bright green, seasoning with the pepper, cayenne and salt. This is used as an appetizer, for spreading croutons, or to make a garnish for savory dishes.

Horseradish Butter.—Thoroughly mix equal parts of horseradish and butter, pass through a sieve and it is ready for use.

Garlic or Tarragon Butter can be prepared the same way, regulating the flavor by the proportion of butter used to the other ingredients.

Nut Butters.—Peanuts, hazel nuts, filberts or other nuts can be pounded, mixed with butter, and then passed through a sieve. The strength can be regulated by the proportions used. They are delicious and easily made.

Scented Butter.—Butter can be worked in a bowl with a few drops of the essence of any scent desired, then passed through a sieve, and it is ready for use.

Caper Sauce.—Melt a cup of butter in a sauce-pan, stir in 2 tablespoons of flour, then add a pint of hot water, stirring rapidly while it boils and thickens; add a little salt if needed, a trifle of white pepper, and about a gill of pickled capers. Caper sauce is served with boiled fish, boiled mutton and lamb.

Mock Capers.—Pick full grown seeds of nasturtiums, but which have not turned yellow, leaving 2 inches of the stem attached; wash them, put in a glass jar, add vinegar enough to cover, and in 7 or 8 days they can be used.

Capers are the unopened buds of a low trailing shrub growing in Asia and Africa, and it is now cultivated in Europe. They are pickled in vinegar and salt before being imported, and are used to flavor sauces and vinegars. They have a pleasant pungent taste, and possess both stimulant and laxative properties. They are sometimes colored green by the use of copper vessels, producing a poisonous adulteration. This can be detected by inserting a polished piece of steel or iron, and if copper is present it will coat the metal in a short time, the same as described for pickles. The hyssop of Scripture is a variety of caper.

Cauliflower Sauce.—Make a drawn butter sauce with part cream and to it add boiled cauliflower, cut into small dice. Nice for fried or boiled fowls.

Celery Sauce.—Take 6 sticks of celery and cut the white part into pieces $\frac{1}{2}$ inch long; cook them in salted water for 20 minutes, pour off the water and cover them with 1 pint of milk; boil until the celery is tender—about 15 minutes; add an even tablespoon of flour and a piece of butter the size of an egg; rub the flour smooth with a little cold milk; season with salt and cayenne to taste. Boil 2 minutes to thicken.

Chestnut Sauce.—Take 2 cups shelled chestnuts, and blanch them by putting them for 3 minutes into boiling water and then taking off the skin; cook till soft in salted water, and then mash very fine. Put 2 tablespoons of butter and 1 tablespoon of flour into a saucepan, and cook till brown; add it to the chestnuts, stir it in well, cook 3 minutes, and season to taste with pepper and salt. Make a gravy of the drippings of the poultry, stir in the chestnuts, and serve. Good for roast turkey.

CHUTNEE SAUCE.

1 cup granulated sugar.	15 sour apples.	1 large onion.
2 cups vinegar.	1 clove of garlic.	$\frac{1}{2}$ teacup raisins, seeded and chopped.
$\frac{1}{4}$ tablespoon ground ginger.	$\frac{1}{4}$ teaspoon mustard.	

Peel, core and slice the apples, and stew soft in just enough vinegar to cover them; then mash finely. Chop the onions and garlic finely and add, with the sugar, raisins, salt, ginger and mustard; scald all together and set away till next day; then add the vinegar, cold, and mix all together thoroughly. Bottle and cork tightly, and keep in a cool, dark place. Good for meat or fish. Splendid.

Cranberry Sauce.—To serve with roasted turkey: A pint of cranberries, $\frac{1}{2}$ teacup of sugar, and $\frac{1}{2}$ teacup of water is about the right proportion. Stew the cranberries in the water until they are tender; then add the sugar.

Cream Sauce.—Heat 2 tablespoons of butter in a sauce-pan, and stir in 2 tablespoons of flour; add a little salt and a little white pepper, then add gradually a

pint of hot cream. Scald the cream by putting it in a pitcher; set the pitcher in a tin dish or kettle of hot water, and set on the hot stove. Cream sauce is good to serve with an omelet, or any kind of boiled fish.

Cucumber Sauce.—Peel and chop finely 2 or 3 cucumbers (they must be so young that the seeds are small); chop one small onion and add to the cucumbers. Season with salt, pepper, cayenne and vinegar; this is better liked by some people than the navy sauce.

CURRENT SAUCE.

1 cup of soup-stock.
1 teaspoon of salt.

1 tumbler of currant jelly. Juice and rind of 1 lemon.
1 mustardspoon of cloves and black pepper.

Put a piece of butter the size of an egg in a sauce-pan with the above ingredients, and let them come to the boiling point; then add 1 tablespoon of corn-starch wet with a little water; stir until it thickens, then send to the table. Good with game and poultry.

Curry Sauce.—Slice thin 1 carrot, 2 onions, 1 head of celery and stew in 2 tablespoons of butter with 1 tablespoon of water, until tender; put in a pinch of mace, a teaspoon of curry powder, and one of thyme leaves; add 1 pint of water and a bay-leaf; let it come to the boiling point; thicken with a tablespoon of flour, strain and serve.

Egg Sauce.—Take three hard-boiled eggs, chop fine, and add to 1 cup of drawn butter sauce. Good for fish.

Fennel Sauce.—Mix 1 tablespoon of flour and 1 cup water to a smooth batter; put into a saucepan, add 2 tablespoons of butter, season with salt, and keep stirring one way until all are melted; add 1 tablespoon of fennel, chopped fine and free from dirt, simmer for 1 or 2 minutes, and serve. Excellent for oily fish, like salmon or mackerel.

FISH SAUCE.

1 saltspoon of cayenne.
1 qt. best cider vinegar.

2 tablespoons of walnut catsup.
1 teaspoon of salt.

1 bruised garlic.

Mix all together. Put in large bottles, after standing a week, stirring every day; cork tightly. Use with any fish.

Hollandaise Sauce.—Rub $\frac{1}{2}$ cup of butter to a cream, add the yolks of 2 eggs (one at a time) and beat well. Stir in the juice of half a lemon, 1 saltspoon of salt, and a pinch of cayenne pepper. When ready to serve, add $\frac{1}{2}$ cup of boiling water; place the bowl in a pan of boiling water, or on the top of the tea-kettle, and scald until as thick as custard, stirring all the time. This sauce is served with fish or meat.

Horseradish Sauce.—Thoroughly mix 4 tablespoons of grated horseradish with 1 teaspoon of pounded sugar, 1 teaspoon of salt, $\frac{1}{2}$ teaspoon of pepper and 2 teaspoons made mustard; moisten it with sufficient vinegar to give it the consistency of cream; 3 or 4 tablespoons of cream added will improve its appearance and flavor. To heat it to serve with hot roast beef, put in a *bain marie*, or put it in a cup or jar and place it in a pan of boiling water; make it hot, but do not allow it to boil, or it will curdle. This is a great improvement on the old-fashioned way of serving cold, scraped horse-radish with hot roast beef. Of course with cold meat the sauce should be served cold.

Horseradish Sauce, No. 2.—Cook in a double boiler for 15 minutes, $\frac{1}{2}$ cup cracker crumbs, $\frac{1}{2}$ cup grated horseradish, and 2 cups milk; add 1 large tablespoon of butter, and salt and pepper to taste. Use freshly grated horseradish and rolled cracker crumbs. This is very appetizing.

No. 3.—Take 2 cups horseradish grated fine, 1 hard-boiled egg pulverized; add sweet cream, and a little butter; salt and vinegar to taste.

Horseradish is a native of Europe and grows readily in damp ground. It should never be preserved by drying, because of the great volatility of its oil, but the root should be kept moist by burying it in the sand. Its volatile oil evaporates so rapidly that even when scraped for the table it almost immediately spoils by exposure to the air. It stimulates the appetite and aids digestion, but is most unwholesome when taken on an empty stomach.

Lemon Sauce.—For a boiled fowl take the chicken liver boiled and mashed fine; add the juice and pulp of 1 lemon (without the seeds) and add it to 1 cup of drawn butter sauce.

Lobster Sauce.—Take the meat from the tail and claws of a boiled lobster, chop it into dice $\frac{1}{4}$ inch in size. Add it to a drawn butter sauce, and season with cayenne pepper, salt and lemon juice. Adding a teaspoon of lobster butter will make it a bright red. Good for any fish.

Mandram Sauce.—Take cucumbers, pare them, and chop in small pieces; take half the quantity of young onions and cut them fine; add the juice of a lemon and a dessertspoon of vinegar. This is very good with any roast meat.

Matelote Sauce.—Peel and cut finely 2 large or 4 small onions, and fry them in a little butter until they are a rich brown, but do not burn them; then add about half a teacup of butter. When it is all melted, stir in a tablespoon of flour, and when it is well browned in the butter, add half a pint of cold water; stir well and let come to a boil. Season with ground white pepper, a little nutmeg, a saltspoon of sugar, and salt to taste; rub all through the fine colander and return to the sauce-pan to keep hot until wanted. Good with meats.

Miss Maitland's Mayonnaise.—Take the raw yolks of 2 eggs, $\frac{1}{2}$ teaspoon of salt, a pinch of cayenne, a pinch of white pepper, a mustardspoon of made mustard, $\frac{1}{2}$ teaspoon of lemon juice, $\frac{1}{2}$ pint of olive oil. After all is thoroughly blended, add 2 tablespoons of tarragon vinegar. Good with fish.

Milk Sauce (Plain).—Melt $\frac{1}{2}$ cup of butter in a sauce-pan; stir in 2 tablespoons of flour; then pour in and stir rapidly 1 pint of scalded milk; season with salt and white pepper.

Mint Sauce.—Take 2 tablespoons sugar, $\frac{1}{4}$ cup of finely cut mint, $\frac{1}{2}$ cup vinegar; mix and let stand 1 or 2 hours before serving, to well season the vinegar with the mint. Use the leaves and tender tips only; wash them in slightly salted water; then shake off the water, gather tightly in the hand, and cut finely with the scissors.

Mushroom Sauce.—Put a piece of butter the size of an egg in a sauce-pan with 1 heaping tablespoon of sifted flour. Soften the butter and mix thoroughly with the flour; then add 1 pint of hot stock, broth, or hot water; boil up, and add 4 teaspoons of mushroom catsup, and the juice of 1 lemon; beat an egg thoroughly and stir into the sauce; remove immediately from the fire to prevent curdling. This sauce is served with poultry and game.

Mustard Sauce.—To 1 cup of drawn butter sauce, add a little cayenne pepper and 3 teaspoons of prepared mustard.

Prepared Mustard.—Take 2 heaping tablespoons of ground mustard and add 1 teaspoon of sugar and $\frac{1}{2}$ teaspoon of salt; wet it with good vinegar and stir it to a smooth paste; then add more vinegar and cook it until it thickens like paste, adding more vinegar until of the consistency required.

No. 2.—Put 3 large tablespoons of ground mustard into a bowl, and pour on enough warm water to make a stiff paste; rub smooth, add $\frac{1}{2}$ cup vinegar, a

pinch of salt, and the beaten yolks of 2 eggs; set the mixture in boiling water, and stir constantly until it thickens; then add butter the size of an egg, and continue the stirring until it is dissolved. Splendid.

French Mustard.—Use 4 tablespoons of the best English mustard, 2 teaspoons of salad oil, 2 teaspoons of white sugar, 2 teaspoons of salt, 1 teaspoon of white pepper, 1 small garlic minced very fine, and tarragon vinegar to mix to a smooth paste. Put the mustard into a bowl and add the oil, rubbing it in with a wooden spoon until it is all absorbed. Wet with the vinegar until you have a stiff paste; add the salt, pepper, garlic and sugar, and work all together thoroughly, wetting little by little with the vinegar until you can beat it as you do cake batter. Beat 5 minutes very hard; put into wide mouthed bottles—empty French mustard bottles are the thing, if you happen to have them—pour a little oil on the top, cork tightly and set away in a cool place. It will be well mixed and ready for use in 2 days.

French Mustard, No. 2.—Take 2 tablespoons mustard, pour on it just enough boiling hot water to make a paste; then add a teaspoon of salt, and 1 of sugar, and add a few drops of salad oil if you have it, a little butter, then a tablespoon of vinegar.

German Mustard.—Take 8 tablespoons of mustard, 4 tablespoons white sugar, 4 tablespoons salt, 1 saltspoon of cayenne pepper, 4 tablespoons of butter, and juice of 1 large raw onion; mix all well together, and moisten with a little vinegar.

The flour of mustard in common use is ground from the seed of black mustard (*Sinapis nigra*). It possesses an agreeable pungency, and is the best stimulant employed to impart strength to the digestive organs. In its present form it has only been in use about 150 years, although it was used long before in a coarsely powdered state. Mixed with hot water, it is a strong emetic. In moderate quantities, both mustard and red pepper are useful with indigestible foods, like lobster, etc., as they are stimulant and aid in the digestion. Mustard is best mixed with cold water, as hot water impairs its essential properties. It is well to prepare it in small quantities, as it is better when freshly made.

CONDIMENTS.—These are used to give a relish to food and gratify the taste. The principal condiments are salt, vinegar, oil, butter, herbs, spices, ginger, pepper and mustard. Some of these, like mustard, are food and condiment combined. When taken in moderation they are conducive to health, but used to excess, they are highly injurious. *Nutmeg* is injurious to many people, causing what is called heart-burn.

Navy Sauce.—Chop finely 2 or 3 large onions, and season highly with salt, pepper and vinegar. This is fine for those who like raw onions, and is served with oysters raw or cooked.

Nut Sauce.—This is made by pounding to a paste, in a mortar, the meats of any kind of wild nuts (hazel nuts, hickory nuts, butter-nuts, etc.) and mixing the paste with an equal amount of nice butter. It is served with game, or poultry.

Olive Sauce.—Extract the salt from 1 doz. olives by soaking them $\frac{1}{2}$ hour in warm water; then pare them close to the stone, round and round, as you would an apple, to remove the stone. Then put the olive into $\frac{1}{2}$ pint of brown sauce, simmer 10 to 15 minutes, and serve. Good with roast duck or other game.

Onion Sauce.—Take 3 good sized onions, boil them till soft, pulp through a sieve, and mix it into 1 cup white sauce. Good with mutton or lamb chop.

Oyster Sauce.—Blanch small oysters, drain, and dry in a towel, and add them to drawn butter sauce; put in a very little lemon juice or tarragon vinegar, let it come to the boiling point, and serve. It goes with fish, boiled turkey or chicken.

Parsley Sauce.—Take 2 tablespoons of chopped parsley, and add it to 1 cup of hot drawn butter sauce. Color with spinach green if you have it, as that will improve the appearance.

Pickle Sauce.—Take 2 or 3 tablespoons of finely chopped cucumber pickles, and add them to a drawn butter sauce.

Sauce Piquante.—Add 1 tablespoon each of chopped cucumber pickles, capers and vinegar, to 1 cup of brown sauce.

Potato Sauce.—Grate 3 or 4 large potatoes, wash out the starch, and dry a little in a napkin; chop a small onion and mix with the raw potato. Season highly with salt, cayenne and vinegar. Good with raw or cooked oysters.

Pepper Sauce.—Break in pieces 6 pods of red pepper, 3 dozen black pepper-corns broken in a mortar, 2 tablespoons of white sugar, and 1 quart of best vinegar. Scald the vinegar in which the sugar has been dissolved, pour it over the peppers, put in a jar, and steep a fortnight; strain and bottle. This is served with raw oysters, or fish, and is a fine addition to various salads.

Raisin Sauce.—Cut in two and remove the seeds from 1 lb. of large, choice raisins; put over the fire in a pint of hot water and stew slowly until tender; then add 1 pint of granulated sugar, $\frac{1}{2}$ pint of good vinegar, a pinch of salt, and a teaspoon of mixed ground cinnamon and cloves. Boil all together 10 minutes, and cork well in wide mouthed bottles. An excellent sauce for any cold meats.

Sauce Robert.—Cut finely 3 large onions, and fry in a piece of butter as large as an egg; caramel a tablespoon of sugar and add to it $\frac{1}{2}$ a pint of water, and 2 tablespoons of good cider or wine vinegar; add salt, ground white pepper, a teaspoon of dry mustard, and a pinch of pulverized sage. Boil well together and add a teaspoon of corn-starch dissolved in a little water. This is good with most kinds of meat, game, or fish.

Shrimp Sauce.—Take $\frac{3}{4}$ of a cup of chopped, picked, boiled shrimps, and add it to 1 cup drawn butter sauce; let it merely simmer, without boiling, and add a pinch of cayenne, and a few drops of lemon juice the last thing.

Sauce Supreme.—Chop 3 mushrooms finely, add 1 tablespoon of butter and the juice of half a lemon; mix it into 2 cups bechamel sauce, let all simmer 10 minutes, rub through a strainer, and it is ready for use.

Tartar Sauce.—Take 2 tablespoons each of Worcestershire sauce and vinegar, 1 tablespoon of lemon juice and 2 saltspoons of salt; put them into a bowl and set in a pan of hot water to heat. Put $\frac{3}{4}$ cup of butter in a sauce-pan, brown it, strain, and add to the other ingredients. Serve it hot with boiled fish.

Sauce Tartare.—Put the yolks of 4 eggs into a sauce-pan, and add $\frac{1}{2}$ teaspoon salt and 1 teaspoon mustard; then add alternately 1 teaspoon each of olive oil and tarragon vinegar (adding them very gradually) until it is of the right consistency. Then add 2 chopped shallots, or instead 2 tablespoons chopped pickled onions and gherkins. This sauce is often made too acid. It goes well with fried oysters or fish, or with boiled tongue or codfish.

Tomato Sauce.—To 6 tomatoes add 2 cloves, pepper, salt, and a sprig of parsley; stew 30 minutes, and strain through a sieve; into a saucepan put butter the size of an egg, set over the fire, and when it bubbles well, add 1 large tablespoon flour; when well cooked (keeping it stirred and mixed well) add the strained tomato; stir until smooth, and serve. This can also be made with canned tomatoes.

Sauce Velouté.—Heat in melted butter 1 pound of veal, cut finely, and any bits of fowl you may have, together with 12 good-sized mushrooms; do not let them brown; then put them into a saucepan with two carrots and onions cut finely, a large tablespoon of flour, salt, pepper, a little mixed spice and as much veal gravy as will cover them. Let it boil up, skim off the fat, and let it simmer for an hour and a half; strain, and keep it covered for use.

WORCESTERSHIRE SAUCE.

1 oz. of cayenne.	1 oz. black pepper.	6 cloves of garlic (minced).
6 anchovies (mashed).	1 grated nutmeg.	1 oz. cloves (pulverized).
2 qts. vinegar.	1 oz. of salt.	

Mix all together and let it stand in a jug for 2 weeks; then strain and bottle for use. It must be tightly corked and kept in a dry, cool place.

WORCESTERSHIRE SAUCE, NO. 2.

3 teaspoons cayenne.	3 teaspoons walnut catsup.	3 onions, chopped fine.
3 anchovies, chopped fine.	1 mustardspoon of powdered cloves.	1 qt. of good cider or wine vinegar.

Put all together in a stone jar and set in a kettle of water to become scalding hot; then let it stand in the jar closely covered 2 days; bottle after straining, and cork tightly.

Walnut Sauce.—A half peck of walnuts young enough to crush easily—they can be rolled on a board or crushed in a mortar. Add 2 quarts of vinegar and a gill of salt. Stir and mash together for a week; then boil in a porcelain kettle, adding a heaping teaspoon of ground black pepper; the same of cloves, 1 grated nutmeg, 1 teaspoon of cayenne pepper, and 1 teaspoon of ground ginger. Boil all to a paste; if too thick to run from a bottle, add more vinegar to thin it. Keep corked tightly in a dark closet. Some cooks do not mash while cooking, but strain off the juice to bottle. Good with meats.

CURRY POWDER. (Kitchener's.)

3 oz. coriander seed.	3 oz. turmeric.	2 oz. cassia buds.
1 oz. cayenne.	1 oz. mustard, ground.	1 oz. ground ginger.
1 oz. allspice.	½ oz. fenugreek seed.	

Pulverize all together; bottle tight, and keep in a dark closet. Good for meats.

CURRY POWDER. (White's.)

½ lb. turmeric.	4 oz. cumin seed.	8 oz. coriander seed.
4 oz. black pepper.	2 oz. ground ginger.	2 oz. cayenne.
½ oz. caraway seed.	½ oz. cardamon seed.	

Pulverize and bottle as above.

Herb Powder for Flavoring.—Dry in a moderate oven very carefully 2 oz. each of thyme, winter savory, parsley, sweet marjoram and lemon peel; then pound the lemon peel in a mortar separately with ½ oz. celery seed; then pound the herbs, mix all, pass through a fine sieve, and keep closely corked in a bottle. To use, add to each 2 pints of soup 1 teaspoon of the powder.

Ragout Powder.—Take 1 oz. of lemon peel, dried and grated, 1 oz. each of black pepper and mustard, ¼ oz. each of nutmeg, ginger, mace and cloves, all ground fine; 1 saltspoon cayenne pepper, and 4 tablespoons of salt. Thoroughly mix the ingredients together, pass through a fine sieve, and keep in closely corked bottle. Ragout or sauce is much improved by adding a teaspoon of the powder.

Sassafras Powder.—Select sassafras leaves which are very young and tender, and dry them in a cool, airy place, spread out on white paper; then pound in a mortar till fine, pass through a hair sieve; bottle and cork tightly. They are used in gumbo and other soups, and in sauces.

Flavored Vinegars.—These are a great addition to many dishes, like fish, sauces, salads, meats, etc. Keep them well corked, in a dry, cool place.

Cayenne Vinegar.—Put into a glass bottle 2 cups vinegar and 1 tablespoon of cayenne pepper, let stand 4 weeks, strain, and bottle for use. It is useful for gargling sore throats, as well as for seasoning soups and sauces; but very little is needed at a time.

Celery Vinegar.—Put into a jar 2 pints celery, chopped fine; bring to a boil and pour on hot 2 pints good cider vinegar, and 1 tablespoon each of sugar and salt; let it cool, cover and let it stand a fortnight; strain and bottle.

Chili Vinegar.—Cut finely a quart of chili peppers, or any kind of ripe red peppers. Add a quart of vinegar and a tablespoon of salt; let it stand for a week, stirring daily; then strain and bottle for use.

Cucumber Vinegar.—Pare, slice, and put into a stone jar, 10 large or 12 small cucumbers; add 2 onions sliced, 1 tablespoon of salt, 2 tablespoons of pepper, $\frac{1}{2}$ teaspoon cayenne and 1 quart vinegar; let it stand 1 week, boil it up once, and when cold, strain through muslin, bottle and seal. Excellent for gravies, hashes, salads and cold meats.

Elder-flower Vinegar.—Into 1 quart of good strong vinegar put 1 pint elder flowers free from the stalks; let stand 2 weeks in the sun or in a warm place; strain through flannel, and put up in quite small bottles. It can also be made by infusing the leaves, either fresh or dried, in the same way, the fresh being the best. The vinegar is used both in cookery and perfumery.

Garlic Vinegar.—Into 1 quart of cold boiled vinegar put 2 oz. of finely chopped garlic; let stand 2 weeks, strain, and bottle for use.

Shallot vinegar can be made the same way.

Cress vinegar can be made by bruising in a mortar $\frac{1}{2}$ oz. cress seed, and letting it stand 2 weeks in 1 quart of cold, boiled vinegar.

Horseradish Vinegar.—Put into a bottle 1 quart vinegar, $\frac{1}{4}$ lb. scraped horseradish, a pinch of cayenne and 1 teaspoon sugar; let stand 2 weeks, shaking daily; then strain and bottle. An excellent relish for cold beef, etc.

Lemon Vinegar.—Put the vinegar in a glass bottle and add lemon peel; the rind of 1 lemon will flavor a pint of vinegar; let stand 2 weeks, then strain and bottle. Make *Orange Vinegar* the same way.

Mint Vinegar.—Pick nice fresh mint from the stalks, fill a bottle or jar loosely with them, and then fill it full with vinegar; cover closely to exclude the air, and let stand 3 weeks; then strain, put into small bottles, and cork tightly. Excellent for roast meats, cold meats, soups, etc.

Parsley vinegar can be prepared the same way, the principle being merely to let the herb soak in the vinegar until its flavor is extracted.

Onion Vinegar.—Mince 6 large onions and add a tablespoon of salt, letting them stand for 5 or 6 hours. Take 1 quart of vinegar and 1 tablespoon of sugar and pour over the onions; put in a jar, tie down the cover and let steep for a fortnight; then strain and bottle. This gives an onion flavor to meat sauces and gravies, when liked, without the trouble of cooking onions for each dinner.

Tarragon Vinegar.—Take a handful of tarragon leaves just before the plant begins to bloom, and cover them with the best cider or wine vinegar (a quart is as much as would be needed for a year in a small family); let the leaves steep in the vinegar for a week, turning them every day; then strain, and bottle tightly. This is good in sauces for boiled fish or poultry.

Other Flavored Vinegars.—*Black Pepper* Vinegar, *Caper* Vinegar, *Capsicum* Vinegar, *Ginger* Vinegar, *Red Rose* Vinegar, *Curry* Vinegar, *Truffle* Vinegar, *White Pepper* Vinegar and several others can be made by steeping about 1 oz. of the article in 1 pint of good vinegar for 2 weeks, to extract its flavor; then strain and bottle. *Celery seed* vinegar is made the same way, but first crush the seeds. Using a little more of any article increases the strength.

MEATS.

THE PROCESSES AND PRINCIPLES OF COOKING.

"To be a good cook means the economy of our great-grandmothers, and the science of the modern chemist."—*Ruskin*.

Before taking up the subject of cooking meats, etc., it may be of both interest and profit to our readers to explain some of the fundamental principles which underlie the processes of cookery. It is a lamentable fact that of the great multitude of people who daily prepare food for human consumption, very many have no idea of the principles involved. And yet these principles are quite simple, and can be easily comprehended, and if they were well understood, immense amounts of food might be saved which are now spoiled in the cooking and thus rendered both unpalatable and indigestible.

Broiling or Grilling.—This is an excellent mode of cooking tender, juicy meats, but is not suited to the coarser pieces of meat, neither is it an economical way of cooking, for it requires a bright, clear, coal fire, or fire of wood coals, and the juices and fat are, to a certain extent, wasted in the process. To broil successfully, the meat must be placed on a gridiron or broiler, put over the fire, and *suddenly* heated to crust the outside and keep in the juices as much as possible. Now let us examine the process a little. The elements in the meat with which we have to deal in attempting to cook it, are fibrin, albumen, gelatine, soluble salts and fat. *Fibrin* (*i. e.*, fibres or muscles) swells and softens when subjected to moderate heat, but is hardened and contracted by intense heat. *Albumen* is another ingredient of meat. The most familiar instance of albumen is found in the white of an egg which is little else than albumen and water; the yolk contains albumen and water, with the addition of some oil and sulphur, and its albumen is of a rather different character and is called "vitellin." Any albumen is soluble in cold or warm water; it begins to coagulate at 145°, sets into a jelly at 160°, and becomes a tough, opaque mass at 212°, and then, with continued heat, gets hard and tenacious.

Now the fibres of meat are surrounded by a liquid which consists of water holding in solution albumen, just as it exists in an unboiled egg, and it also holds in solution many soluble salts, etc., which are of the highest possible value as articles of food. In preparing meat for the table, great care should be taken to *prevent the escape* of this precious juice, as the succulence and value of the meat largely depend on its retention. The best way to retain these juices is to coagulate the albumen on and near the surface of the meat. When *quickly* heated, this surface albumen coagulates and forms a thin film or crust, which is nearly impervious to water, and which keeps the juices inside the meat. When heated only moderately, on the other hand, no such crust is formed, the heat draws out the juices, and its tendency to do so is not counteracted by any surface crust at all. It will be evident, also, that the meat should be turned often in order that the crust may be formed *all over its surface*, and not merely on one side; but do not let the meat scorch. Now, when the meat is quickly heated, a surface crust formed, and the juices imprisoned, the heat will generate steam from them which will cause the fibrin (muscular fibres) to swell and soften, and the meat will be rather puffy. The broiling should continue just long enough to start the juices and loosen the fibres, but if continued too long, the juice will gradually ooze through the outside crust and evaporate, while the albumen will harden clear through the meat, which will then become tough and indigestible. Never stick a fork or *anything else* into meat to see if it is done, as that will ruin it by letting out the juice, this letting out the juice being the very thing the intelligent cook seeks by all means to prevent. If the article is dipped in melted fat before putting it on the gridiron, it will help set the surface albumen quickly.

If it is very lean, or there is but little fat, it is well to draw it through a little melted butter or oil on a plate. For *fish*, it would be well to always do this, and the fish (not meat) may be sprinkled with salt and pepper before being dipped in the oil. Fish is also floured to prevent its sticking to the gridiron.

When the meat is browned all over, and ceases to feel spongy, it is done. A little experience will show just the right time to stop the broiling; then allow it to rest for one minute on a very hot plate, and serve. Do *not* put any salt on the meat while it is cooking; the seasoning should be put on the meat after it is put on the hot platter. Remember, therefore, that the rules for broiling are always the same, viz.: a hot fire at *first* with a hot gridiron, well greased, frequent turning, no holes made to see if the meat is done and so let out the juices. Also remember, that the smaller the article, the hotter the fire necessary, and that for larger ones a more moderate fire is needed, or hold it further away from the fire.

Baking and Roasting.—These often do duty for one another, as the old method of roasting meat by hanging it in front of an open fire, is very little practiced now. Roasting proper is a wasteful method, as by it, meat usually shrinks from $\frac{1}{4}$ to $\frac{1}{2}$ in weight, but the taste is agreeable to most persons, and it is considered digestible. The first object is to harden the surface albumen, and so imprison the juices of the meat the same as in broiling. To do this, the fire and utensils must be *very hot at first*, and the heat can afterwards be lessened by cooling the oven. The smaller the joint, the higher the temperature to which it should be exposed, while the larger the joint, the smaller the fire, lest it should be burnt outside before it is cooked enough inside; but it should be hot at *first* and cooler afterwards. If the oven is only *warm* at first, the surface albumen will not be coagulated, the juices will escape, and the damage cannot afterwards be repaired. In a perfectly roasted joint the outside albumen should be thoroughly hardened, but inside, the heat should only reach the stage which swells and softens the fibrin. If cooked more than this, the fibre becomes tough and separates into bundles which resist the teeth and digestive organs.

Basting.—It is *very* important that the meat should be frequently basted—say every 10 to 20 minutes—and do it quickly, so as not to keep the oven door open longer than necessary. The drippings from the meat are the best thing with which to baste it; some cooks add some beef drippings. Owing to the heat of the oven, the outside surface soon becomes dry, and basting the meat covers it over with a thin film of fat which assists in imparting heat, while it checks the evaporation of the juices. Water is sometimes put in the dripping-pan to baste with, but it should be remembered that the water cannot be heated above 212°, while 280° or more is needed for proper baking; so that water should not be put in the pan at first. Use beef drippings or fat from the meat itself at first, and add a little water later, if it is used. If a frothed surface is desired, flour may be dredged upon it every time it is basted. When you baste it, look at the joint and see if one side is more brown than the other; if so, turn it around; also, it is well very often to turn it over. All game and poultry requires a hot, clear fire, frequent basting, and should be sent to the table direct from roasting. It should not be finished long before it is wanted, and then “kept hot.”

A basin of water in the oven will produce steam which will check the tendency to scorch and dry the meat. Hot, dry air is thirsty for water and will absorb it eagerly from any moist substance with which it comes in contact; but if the air is kept moist by keeping a pan of water in the oven, the tendency is overcome; water in the dripping-pan does the same thing. This, however, should not be relied on as a substitute for having the oven hot at first and cooler afterwards. Do not put in the water until after the strong heat at first has set the surface albumen of the meat. It is better not to use water with meat which is desired rare, or with small cuts, but only for large roasts which require long, slow cooking.

Boiling.—This is the most common method of cooking food. To boil properly is quite an art, and the principles underlying the process are as follows: Water boils at 212° F. in most places, but at high altitudes it boils at a lower temperature than that, because the air is lighter, and the pressure on top of the water being less, it more easily rises into vapor. People who move to a high altitude often notice that while the water is boiling, the food which they have in it does not seem to cook as rapidly as it did in a lower altitude, and this is the

reason—the water boils at a lower temperature, and therefore is not so hot. Water in a vacuum, relieved of the pressure of the air, will boil at about 100°; 6500 feet above sea level it will boil at about 200°; at 9000 feet it boils at about 194°, and so on. Down in a mine, on the other hand, water boils at a higher temperature than 212°, because the pressure of air on top is greater. Salt water boils at a higher temperature than fresh water, its boiling point being about 224° or less, according to its saltiness. No one can make the temperature of water hotter than 212° while it remains in an open kettle, and remember that it is *equally* hot whether it boils *fast or slow*. The water at the bottom of the kettle is turned to vapor by contact with the hot metal, and it rises toward the surface; the bubbles are condensed by the colder water towards the top, if the water only simmers, but in *boiling* water the bubbles of vapor rise to the surface, burst, and escape in the form of steam. It is these bubbles of rising vapor which cause the “bubbling” of the water. The active bubbling which takes place in violent boiling may sometimes be of service in cooking, although it is more often objectionable. When water boils *violently* it is a great waste of fuel; and many of the more volatile and savory particles of food are carried away in the steam, leaving the remainder less nourishing and palatable. *Violent* boiling, therefore, is not desirable in cooking. Now when meat is boiled to be eaten, what we want is to have the meat tender, and have it retain its flavor and juices as much as possible. For this reason, meat should be plunged at *first* into *boiling* water, and that will coagulate the albumen on the surface, as explained about broiling; the thin film of albumen thus formed at the surface of the meat, may not be thicker than cotton cloth, but it is nearly impervious to water, and it will serve to hold the juices *inside* the meat. When that film is once formed, the boiling should be checked, for it is as undesirable to toughen the albumen clear through the meat, as it is to prevent the escape of the juices. After plunging the meat into the boiling water, therefore, check the boiling and let it merely *simmer*, until it is gradually heated through to the center sufficiently to cook it, but not enough to *harden* the albumen. While the temperature of boiling water is 212°, that of *simmering* water should be about 160° to 180°. Cooked in this way, however, meat should be cooked longer than by the old method of rapid boiling.

The common way among many who do not understand the principles involved in cooking, is to put the meat in cold water first, and then bring it to a boil afterwards; but this is the worst possible way, for it leaves the meat dry and flavorless, because, there being no barrier or crust on the *surface* to hold in the juices, they are *dissolved* and *drawn out* of the meat by the water. When meat is boiled for soup, however, the very object aimed at is to extract all the juices, albumen and gelatine possible, and for that purpose it should be cut into small pieces, to multiply surfaces, put into cold water at first, heated slowly, and allowed to *simmer*, as that method will draw out the juices and nutriment of the meat. It is well for cooks to understand the results of these different processes, and then they can intelligently select either method according to the object they have in view.

If there are any exceptions to the above principles for boiling meat, they are in the case of sinewy and tendinous meat when gelatine is abundant, for to make gelatine soft and eatable, long continued boiling is necessary. Thus calf's head and feet, shins of beef, knuckles of veal, cow heel, tripe, etc., are usually best put into cold water first, and boiled longer than other meat.

A good practical method for boiling meat is to put it first into *boiling* water, being sure to have enough water to cover the meat. Of course, putting a large piece of cold meat into the water will at first stop it from boiling, so keep it on the fire a short time (say 10 minutes) with the lid on; then take off the lid and skim it. As soon as the water begins to boil thoroughly again, the surface albumen will be coagulated; then lift the kettle off the fire on to the side of the range, so as to stop the boiling at once. Leave it there a short time—say 15 to 20 minutes—so that the meat may get hot clear through. This will prevent the meat at the finish from being overcooked outside, and blue and uncooked in the middle. Then place it on the fire again and let it *simmer*. The time for simmering should be from 10 to 12 minutes for every pound of meat. All the best experience, however, agrees in this, that a long, slow boiling produces the best results, so that no exact rule can be given as to the time. An even teaspoon of

salt can be put into the water in which the meat simmers; it is enough to season the meat on the outside, and more can be added when it is eaten, and, besides, most of the meat sauces contain a quantity of salt which serves as flavoring.

After meat is put into boiling water, a scum will rise to the surface; this should be skimmed off and thrown away. It is one of the very few things in the processes of cooking which should be thrown away, as it is wasted food. The scum is the albumen which is drawn out of the meat, coagulated by the heat, and rises to the surface. Although the greater part will rise at first, do not fail to skim during the whole process; if any is left, it will attach itself to the meat, and spoil its appearance.

Salt meat should be put in cold water after being washed thoroughly in fresh water or milk; the water should then be slowly brought up to the simmering point. This will draw out the salt. Remember that all salted and dried meats should simmer slowly, as rapid boiling hardens them. All trimmings of meat should be used in the soup-kettle, or simmered in a little water and made into gravy.

In boiling an egg, what we want is to set the white, without making the albumen tough and hard; the best way, therefore, is to always keep the water below the boiling point—nearer that of simmering water. Some people put the egg in cold water and take it off as soon as it boils. Others prefer to put it first into a sauce-pan of boiling water, and then take off the pan and let it cook as the water cools. It is a mistake to boil even a hard boiled egg an instant longer than is enough to set the albumen in the white and yolk.

Recollect that vegetables require *boiling*, and meat only *simmering*; therefore, you can not, as a rule, boil vegetables with meat without spoiling one of them. Vegetables should be put into boiling water *at first*, and *kept* there.

Flour foods such as macaroni, sago, rice, cornflour and flour puddings, should be kept all the time in boiling water, in order to burst the starch granules. The mechanical action of fast bubbling water is often useful here, partly in preventing the grains of rice, etc., from settling to the bottom of the pan.

Stewing.—This is a process often confounded by ill-informed people with boiling a long time, and even moderately good cooks often confound it with “simmering.” A stew, properly so called, is when both meat and juice—that is, all the liquor—are eaten together. Stewing invariably requires a heat much below that of boiling water; 135° to 160° is about stewing point. Whatever is stewed, parts with much of its goodness to the surrounding liquor, which should not, therefore, be wasted. And yet it is not desirable in stewing to extract *all* the juices from the meat, as is done in making soup or beef-tea; part should be barely coagulated, and thus retained in the meat in as tender a condition as possible. To accomplish this, a *bain-marie* or double boiler is an excellent thing to use. If you have not this, it will be a good idea to extemporize one, by setting one dish inside another, something like a carpenter’s glue-pot. A pudding-basin, with a wide projecting rim, may be set into another pan just large enough for it to drop into and rest upon its rim. Put the meat into this basin, pour hot water over it, and pour hot water into the outer basin, forming a “water bath;” then let this outer water boil, but very gently, so as not to make the inside basin jump with its steam. Stew it thus for about double the time usually prescribed, and compare the result with similar materials stewed in the old way. The superiority will be evident. In any event, even if stewed on the old plan, the water should not *boil* nor get near the boiling point; keep the water at 150° to 160° by setting the dish at the side of the stove and letting it quietly stew. Less water is used than in boiling. A common mistake is to put in too much water. The meat needs to be barely covered, and cooks forget that at the moderate heat of stewing there is very little loss by evaporation. It is the cheapest method of cooking that there is. Little heat is required, and therefore little fuel used; nothing is wasted, and whatever goes into the pot comes out. No attention is needed while cooking, and the cheapest and coarsest meat can be used. This method is peculiarly adapted for all gelatinous meat, such as knuckles, heads and feet, and for all tough, fibrous meats, because long-continued, moderate heat, with moisture, is the best way of bringing gelatine and tough fibre into an eatable condition, and it will not only make it eatable but palatable. A tough fowl can in this manner be made presentable, better than by any other. In order to prevent the extraction

of *all* the juices from the meat in stewing, the best way is to fry it first; this gives it a good color and moderates the escape of the juices, which is often very desirable. The thoughtless method of putting in an excess of water and then letting it boil away, produces miserable results.

In stewing, meat and vegetables are often cooked together, but as the principles involved in cooking them are different, and they require different treatment, the best plan is to boil the vegetables first, and then use them and their liquor for the stew. Some people have a prejudice against a "stew." If so, you can dignify it by giving it a French name, and call it a *ragout*—but be sure you pronounce it *ra-goo'*, not *ra-gowt*.

Fricasseeing.—This means, literally, "to fry." It is usually applied to a chicken, rabbit or any small animal which is cut up and fried, either before or after stewing, and served in a well flavored sauce.

Frying.—There are 2 ways of frying known to cooks as (1) wet frying, sometimes called French frying or frying in a kettle of hot fat; and (2) dry frying or cooking in a frying-pan. The best results are undoubtedly obtained by the first method, although it is little used in this country. We will describe the 2 methods:

To fry anything by the first, or French method, is to cook it by immersing it in very hot fat. In fact, just as in boiling we must let the water *cover* what is boiled, so in this method we must let the *fat* cover what is fried. The same fat will do over and over again, so that this method is not as expensive as many people imagine. Food fried in this way comes out quite dry, and without any of the greasy moisture of frying-pan cookery. An iron sauce-pan or small kettle must be used, as the heat of the fat melts the solder of a tin pan. The rules for good frying are: (1) The fat must be sufficiently deep to fully cover the article. (2) The fat must be sufficiently hot, in fact, it should *smoke*. (3) When anything is floured before it is fried, it must not be floured until the last moment before it is plunged into the fat. (4) When anything is fried that has been egged and bread-crumbed, it is best to egg and bread-crumb it some little time before it is fried. (5) Shut the kitchen door and open the window a little to avoid scenting up the house; this is a practical point which should be remembered.

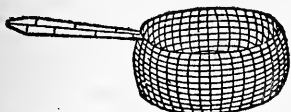
Now a few hints: The exterior of the substance to be fried should be as *dry* as possible; by this means we get a good color, and less bubbling is caused. Fish can be rubbed in flour; vegetables with a cloth; meat should not be washed. Before dropping anything that contains much water into hot fat, lift the kettle off of the stove, as the fat is liable to bubble over and catch fire. Most things that are fried are covered with egg and bread crumbs, flour and milk, or batter, in order that a crust may be formed round them to keep the juice in and the fat out; the essential thing is to cover them completely and leave no crack. It is best to warm the articles a little before putting them in to fry, as, if they are too cold, or if too many are put in together, they will chill the fat, so that it will soak into them. On taking any fried article out of the fat, lay it to drain on a sieve, bottom up, or on a very hot cloth, or best of all, on a sheet of blotting paper. The hot fat being extremely fluid, will drain off and leave the article free from grease. Never pile up on top of each other articles which are fried. Bread crumbs should be very fine; if coarse, grease will adhere to or be absorbed by them. They should take a fine, yellow color, being slightly charred or toasted by the high temperature to which they are exposed. Things well fried are not greasy, but quite dry.

Frying food thus is not adapted to materials which require slow cooking at a low temperature, because it heats the surface much beyond the temperature of boiling, and, if prolonged, meat is heated clear through and toughened. Croquettes and similar preparations of cold meat are much nicer cooked in this way, and many kinds of fish are greatly improved by this process, while chops and cutlets which are first egged and bread-crumbed, are delicious thus cooked.

If many articles are to be fried, reheat the fat occasionally to keep it hot enough. Using fat which is not hot enough is a common mistake; keep the fat *smoking* hot. There is much more danger of not having it hot enough than too hot.

It is advisable, when possible, to use a wire frying-basket. This does away

with much handling, and lifts all the things out at the same time. A basket should not be used for fritters, which stick to the basket, and the articles in the basket should not touch each other. As a basket expands with heat, it should not fit the pan very tightly; it should not touch the bottom of the pan. If you have no basket, use an iron spoon, as tin or Britannia metal will melt if the fat is very hot. Grease the basket by dipping it into the hot fat before putting the articles into it, and



BASKET FOR FRYING.

lay them in so as to keep them from touching each other.

Fats and oils may be heated much hotter than water, but some burn much more easily than others. About 350° to 400° is a suitable temperature for use; it can be higher; for some things which require slow cooking, it should be lower. It is better to have the temperature high at first, lowering it afterwards. Remember that putting anything cold in fat to cook, lowers its temperature somewhat. The temperature of fat can be obtained with a thermometer, but without that, the following tests offer some guide: (1) Drop in a few drops of water; if the fat bubbles thereupon, it is over 212°; if it bubbles very smartly, it is over 300°. (2) Drop in a piece of bread and take it out in $\frac{1}{2}$ minute; if the bread is then crisp, the fat is about 350° or more. (3) The more violent the bubbling when anything is put in, the hotter the fat. (4) A thin, filmy, blue smoke rises when the fat is fit for frying; after that, if the fat is further heated, it becomes thicker, until the fat is burning, when there is a dense cloud. (5) Fat, unless it has left off bubbling and is quite still, is never hot enough for frying. These rules are true of all fats, and more or less of all frying. The reason that fat crackles when it is first put on is, that there is generally water in it. This water, being heavier than fat, sinks to the bottom and is converted into steam, and these bubbles of steam escaping up through the fat makes the bubbling. If not moist with water, it would not crackle. When the crackling ceases, it shows simply that the fat is hotter than boiling water, and that the water is evaporated. When you have finished using the fat, pour it into a basin containing some hot water. Have more water than fat, and pour the fat in gradually, if it is very hot, or else it will suddenly create a volume of steam; then agitate the fat a little, and let it stand until it is cold. When you next use the fat, take it out in one large cake, and scrape the part next to the water, which will contain impurities. The cake should also be occasionally strained while warm.

With regard to the best fat to use, it may be said that, while olive oil is generally considered the best, it is too expensive for general use, and the taste is not liked by some people. Pure cotton seed oil answers well, and it has but little odor. Mutton fat or drippings is not suitable, as it is apt to leave a tallowy taste and smell, and it cools quickly. For every-day use, lard is best, or, lard mixed with clarified beef suet, or the drippings from roast beef, pork or veal. We think, however, that some of the vegetable oils will soon largely supplant the animal fats for frying, and most other cooking purposes. There are many advantages and few objections to their use. The fat can be used over and over again. It is generally believed that for this method of frying, several different supplies of fat are needed, one for meat, one for fish, and so on, but if the fat is properly handled and clarified, it will be found that this idea is exaggerated.

Fat for frying can be clarified by cutting it up into small pieces, and putting it into the sauce-pan with just enough water to prevent its burning, and then heat it over a slow fire until the bottom can be seen; then it should be strained, or heat it in a frying-pan to 285° to 300° F., and then very cautiously sprinkle upon it small quantities of water. The steam carries off the volatile fatty acids which produce the rancidity in such as fish oils, and also removes the neutral, offensive fatty matters that are decomposable by heat.

COTTON SEED OIL, as it comes from the refinery, is limpid, pure and sweet, with the color, taste and odor of bottled salad oil. From a hygienic point of view, it is a most valuable substitute for lard, and is superior to that for culinary purposes. Use it as you would lard, taking only $\frac{2}{3}$ the quantity. For frying fish and oysters, it is less liable to burn than lard, and it does not retain the odor of the fish. For frying fish or fritters, or for baking waffles and batter cakes, it should be hot, or they will absorb too much of the oil. For corn-bread, add it hot the last thing; it makes good egg bread without eggs. For waffles with cold boiled rice, or for cornmeal batter cakes, the addition of a little of the

oil to the batter, renders it as rich and tender as though 2 or 3 eggs were used. For browning chopped onions and flour, stews and gravies, it is not so liable to burn as lard, and it gives a very rich appearance.

If an accident occurs when frying, do not throw water on the flames, as that turns to steam; smother them instead with a thick cloth or strip of carpet.

The philosophy of frying consists largely in the fact that different fluids will receive different amounts of heat—water boiling at 212°, beyond which it cannot be heated in an open kettle, while fat or oil will go to 560° to 600°. Water dissolves and extracts the juices of meats submitted to its action, but in fats the juices are preserved, for they are insoluble in oil, and substances submitted to its action when it is very hot, harden, assume a more or less deep color, and finally become carbonized. If the fat is at the right temperature, it will instantly harden the surface albumen, but if the temperature is too low, the fat will soak into the article, instead of drawing out the juices as water does.

To fry by the second plan we mentioned above, or dry frying (the French call it *sautéing*) the following directions may be given. To fry meat properly in this way, requires care and expedition, or the operation will be a failure, and, as in the case of broiling, it must be done the last thing while preparing the meal; everything should be in place on the table, excepting the vegetables in their hot dishes, and if mutton or lamb is to be fried, the plates, even in warm weather, must be hot, as the fat chills rapidly after being taken from the fire. Have the cutlets, steaks or chops all ready for the pan beforehand, so as to lose no time at the last; the slices should be of the right size to serve. If beef is to be fried, a little of its own fat, cut in bits, should be melted and sizzling hot in the pan—on this much depends. Put the pieces of meat in the hot fat, add no salt, as that draws the juices, and fry as fast as possible, turning and tossing the meat to keep it from burning; do not leave it a moment. Have a hot platter in readiness and take up the meat when well browned on both sides (which will be in less than 5 minutes) dust on it a little pepper, if liked, and spread it with butter, with a very little salt sprinkled over it very evenly, and send it to the table as hot as possible. Meat done in this way will be tender and juicy, like well broiled steak. A long, slow simmering of fresh meat, salted in the pan, will be hard and indigestible. Fresh pork, beef, mutton and lamb should each be cooked in its own fresh fat; veal is so dry and lean that it is usually fried in the fat from salt pork, and afterwards seasoned as above. Other meats, if they are lean, can be fried in the fat of a single slice of salt pork, rather than in butter, which burns if brought to the right heat to cook meat without losing the juices. Only enough fat is required to keep the meat from sticking to the pan; if there is more, it can be poured over the meat, or thickened, and with a little water added, used for gravy.

Braising.—This is a way of cooking by the action of heat *above* as well as *below* the article cooked—the effect is somewhat similar to stewing. A braising-pan has a deep *cover* on which live coals are placed. The pan is air-tight, and as all evaporation is thus precluded, the food imbibes whatever flavor the cook may wish to give it, in order to effect which, she must place in the pan with the meat, whatever vegetables, etc., her recipe may direct. The ingredients should be very well proportioned, and the stewing should go on very slowly. It is not a common method of cooking in America, although more practiced in Europe.

To Steam.—Cooking by steam in private families is not as generally practiced as it might be. The steamer fits tightly on a pan or kettle, and as the water boils, the steam fills the steamer and cooks the articles in it. A tough fowl, filled with a stuffing of bread crumbs, etc., and steamed for 2 hours or so, will be made quite tender. Fish and oysters cooked in this way are delicious. Stale bread and biscuit steamed 5 or 6 minutes, is made fresh and good. Plum cake steamed 3 hours and then baked 1 hour, is better than when baked in the ordinary way. Potatoes are often steamed. In steaming puddings, etc., do not use water in which anything else has been cooked, as it will give them an unpleasant flavor. Articles being steamed cannot burn, but do not let the fire get so low that the water stops boiling for an instant, or the supply of steam will be lessened, to the detriment of the article being cooked.

Sautéing.—This is the French name for frying anything quickly in a small pan, with a very little dripping, oil or fat, doing one side at a time. It is the same as the dry frying which we have previously described. The art consists in

having the pan and fat very hot at the start, and in doing it very quickly, to save the juices and succulence in the meat.

To Lard.—This consists in sticking bacon or other specified articles into poultry, meat, etc. It is done with a larding needle. It is sometimes thought a difficult operation, but is really exceedingly easy. It improves dry, lean meats, and though it needs to be done neatly, to look well, a little practice teaches this readily. The method is to cut fat bacon into narrow strips of equal length and thickness; for poultry and game, these should be about 2 inches long, $\frac{1}{8}$ inch thick, and $\frac{1}{4}$ inch wide; for fillets of



Fig. 1. LARDOONS.

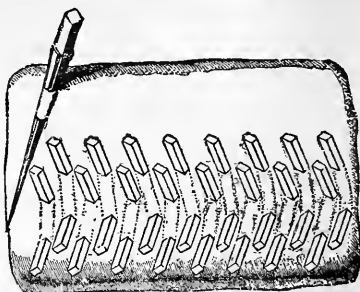


Fig. 2. METHOD OF LARDING MEAT.

beef, loins of veal, or other solid joints, the same length, and $\frac{1}{8}$ inch thick and wide. Notice that for all white meats, the bacon used must be cured without saltpetre, as that tinges meats red in cooking. Put each of these strips of bacon (which is called a "lardoon")

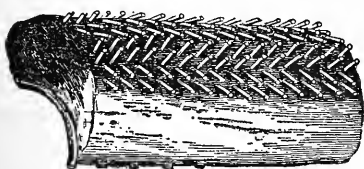


Fig. 3. LARDED NECK OF MUTTON.

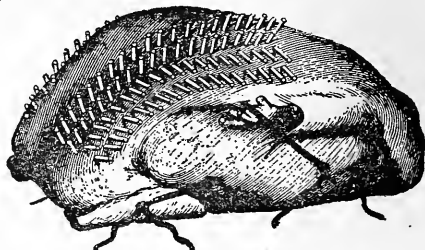


Fig. 4. LARDED TURKEY.

into a "larding needle," and pass the point of this through enough of the fowl or joint to hold the lardoon safely; then draw the needle through, leaving the bacon in the meat, with both ends projecting equally. Do this in regular rows, and at equal distances, until the meat is covered with a regular pattern. Generally the breasts only of poultry and feathered game are larded, and the backs, or backs and thighs of rabbits and hares. With soft meat, like poultry it is well to first dip the part to be larded in boiling water for a moment, as that imparts greater firmness to it, and makes it hold the lardoons better.

Daubing.—This is somewhat like larding, but the strips of pork are pushed entirely through the meat from side to side, instead of being merely inserted near the surface. By this means the fat and flavor of the pork penetrates the *inside* of the meat, giving it a flavor which some people relish. Cut the fat pork into strips as for larding, but a little thicker, and long enough to a little more than go through the meat, projecting a little to each side. A hole is first punched clear through the meat with a steel instrument, and then the strip of fat pork is thrust through with the larding needle or fingers. Daubing is usually applied to a thick piece of beef or veal. The flavor of the pork may also be obtained, however, by laying it on the top of the meat, leaving it on while cooking, and removing it when done.

Boning.—This is usually done by the butcher, and means literally making the joint or fowl, or whatever it is, boneless.

Barding.—This is practiced on poultry and game and consists in fastening a thin, large slice of fat salt pork on the breast; it answers the purpose of basting.

Glazing.—This consists in covering certain meats with a thin, golden-brown paste (a glaze) made by boiling down rich soup stock. It is used to give meats which have not been colored by cooking, a glossy surface, and a brown, roasted appearance.

To Egg and Bread-Crumb.—The best way to make bread crumbs is to rub stale bread through a wire sieve, because the bread crumbs should be very *fine*. A wire sieve is a necessity in every home where economy is considered or good cooking desired. If the bread crumbs are to be used for meat or fish, a little pepper and salt can be added; if for sweet dishes, add a little sugar. The eggs should be beaten up lightly; a teaspoon of water to each egg helps in beating it thin. The rule is, to dip the article that is to be egged and bread-crumbed first in the crumbs to dry it; now let it dry a little, then dip it in the beaten up egg, drain it, and then roll it again in the bread crumbs and leave it in the crumbs until it is put in the smoking hot fat. It is best to egg and bread-crumb anything some time before it is fried. The drier the crumbs the better, if a good color is desired. The philosophy of this process is that the egg, being albumen, when put into the hot fat, hardens into a thin, tough film, which keeps the fat from penetrating, and with meat and fish holds the juices within them. It is evident that for this purpose every part of the surface should be perfectly covered with the egg, and that there should be no cracks for the juice to escape through. If the egg and bread crumbs fall off, it is because the crumbs are too coarse; or there is not enough fat in the kettle; or it is not hot enough, the latter being often the cause.

Dripping.—Excepting the fat of mutton, lamb, and that from boiled ham that has been smoked, "dripping" is any fat tried from cooked meat. The fat of salted pork is ready for use as soon as tried, and may be poured from the frying-pan into the bowl kept for that purpose, but the fat from roasted or boiled meat contains more or less water and must be heated in the frying-pan until all the water has evaporated, and then strained into an earthen vessel. If more dripping is saved in this way than is needed for shortening or for re-cooking potatoes, it can be strained into the kettle for frying doughnuts. An economical cook never allows good fat to spoil. The fat from baked sausages is excellent for re-warming potatoes, but will not do for the doughnut-kettle. The fat from poultry may be used very soon after trying out, but it becomes rancid much sooner than the fat of beef and pork. The fat of mutton and lamb, with that from the boiled smoked ham, is only fit for the soap-man. When the drippings to be clarified for use are smoking hot in the frying-pan, all unpleasant odors (like that of fat from corned beef) can be removed by slicing 1 or 2 raw potatoes into the pan and leaving them until fried crisp; the potatoes absorb all the unpleasant flavors.

Thermometers.—We wonder that no one has ever invented a good thermometer to be used when cooking, and in the kitchen. We know of none now. Mrs. M. H. Abel says she fastened a thermometer to a cork, having the bulb project below, and protecting it with a piece of wood; thus arranged, the cork would float on the water, and the temperature of any article boiling or stewing could be determined. She also used it to test the oven, by hanging it on a wire frame. The present method of guessing at the temperature when cooking is very unsatisfactory, and must give way before long to a more exact and scientific plan.

Hints.—In cooking meat, it will be an assistance to remember that freshly-killed meat requires more time to cook than that which has been kept; also that meat needs cooking rather longer in cold weather than in hot.

To make tough meat tender, soak it in vinegar and water; if the piece is very large, soak it about 12 hours; for 10 lbs. of beef, use about 3 quarts of water and $\frac{1}{4}$ pint of vinegar, and soak it for 6 or 7 hours. If the vinegar is not very strong, a very tough piece can be soaked 3 or 4 days in summer, and twice as long in winter to advantage, and spices may be added if liked. Or the meat can be brushed over with vinegar and let stand with that on $\frac{1}{2}$ to 1 day. The tough fibre is cut and softened by the acid. Sour milk is used for the same purpose, by foreign cooks, the lactic acid of the milk acting the same as the acetic acid of the vinegar. The meat should be immersed in the sour milk, which should be changed every day, and thoroughly washed off before cooking the meat. Meat is also hung to make it tender, but we explain about that under "Keeping Provisions." Stewing also makes many tough meats tender; see the preceding article on "Stewing."

Washing Meat.—Meat purchased from a good butcher should not need washing before being cooked; all that will be necessary will be to dampen a cloth with cold water and wipe it off; or scrape it with a dull knife to remove splinters of

bone, sand, etc. Washing meat will dissolve out the surface albumen and juices, and detract just that much from its value. If *necessary* to wash it, do not let it stay in water, but use cold water, throw it on quickly, and then wipe the meat dry.

The action of salt on meat should be understood. Salt causes the fibres of meat to contract, and the juice to flow out of its pores, often forcing out in this way as much as $\frac{1}{2}$ of the juice of the meat, which is the reason of the fact, familiar to every housewife, that dry salt in contact with fresh meat gradually becomes fluid brine. Now as the juice thus extracted contains albumen, and other valuable principles, it will be seen that meat which has been preserved with salt can never have the nutritive value of fresh meat, because the juices when once drawn out can never be restored.

Hard and Soft Water.—Many cooks also do not understand the action of different waters on meat. For making soup, or broth, soft water, unsalted, is best to use, because that more readily penetrates the tissues and extracts the juices; but for cooking meat to be eaten, where it is desired to retain the juices in the meat, hard water is best, or if soft water is used, put a little salt in it. Salt added to the water in which meat or fish is cooked acts in 3 ways: (1) It helps to coagulate the surface albumen. (2) Water containing salt boils at a little higher temperature than pure water. (3) It increases the density of the water, and the juices flow out less readily. Although each action is rather small, they all combine to keep in the juices.

The disagreeable odor of boiling may be kept from filling the house by putting into the water a pod of red pepper. A lump of charcoal wrapped in muslin and dropped in the kettle will also absorb the odor and prevent its permeating the house.

Burning Fat.—When, in broiling meat, fat drops down on the coals, and you fear it may give the meat a smoky taste, take off the gridiron for a minute or two, and put a little salt on the coals.

To thaw frozen meat, put it in cold water, and do not try to cook it until it is fully thawed. Do not thaw it until just before it is to be cooked. To ascertain whether the thawing is complete, drive an iron skewer through the thickest part of the joint; if there is a core of ice within, it will be distinctly felt by the resistance it offers. If the meat is cooked before it is perfectly thawed, it will often display a raw center when done. Meat that has been frozen decomposes easily when thawed, and it is apt to be insipid and dry when cooked.

TABLE SHOWING THE PERCENTAGE OF FOOD ELEMENTS IN DIFFERENT MEATS.

	Water. %	Albu- menoids. %	Fats. %	Mineral Matters %	Potential Energy in 1 lb. Calories.
Beef, neck.....	62.0	19.5	17.5	1.0	1100
chuck ribs.....	58.0	17.6	23.5	0.9	1320
brisket.....	47.4	14.6	37.2	0.8	1840
flank.....	27.4	12.0	59.9	0.7	2750
round.....	68.2	20.5	10.1	1.2	805
leg.....	72.1	21.0	5.7	1.2	630
sirloin.....	60.0	18.5	20.5	1.0	1210
liver (Carbohydrates 3.5%).....	69.5	20.1	5.4	1.5	665
tongue.....	63.5	17.4	18.0	1.1	1085
dried (Carbohydrates 1.4%).....	58.6	28.8	4.4	6.8	745
corned.....	49.8	14.2	23.0	3.0	1655
Veal, shoulder.....	68.8	20.2	9.8	1.2	790
Mutton, shoulder.....	58.6	18.1	22.4	0.9	1280
leg.....	61.8	18.3	19.0	0.9	1140
loin.....	49.3	15.0	35.0	0.7	1755
Lamb, shoulder.....	51.8	17.5	29.7	1.0	1580
leg.....	64.7	18.9	15.3	1.1	1000
Pork, shoulder roast.....	50.3	16.0	32.8	0.9	1680
Fat salt pork.....	12.1	0.9	82.8	4.2	2510
Smoked ham.....	41.5	16.7	39.1	2.7	1960
Tripe, soured.....	84.0	13.9	1.8	0.3	336
Chicken.....	72.2	24.8	2.0	1.4	540
Turkey.....	66.2	23.9	8.7	1.2	810
Sausage (pork.).....	41.2	13.8	42.8	2.2	2066

Do not put salt on meat that is being cooked until it is nearly done; if added earlier, it toughens the fibre. We elsewhere explain about buying and preserving meat.

The table on the previous page shows the composition of various kinds of meat so that our readers can judge of their nutritive value. The rule in meat is, "the more fat the less water." If flesh forming material is wanted, the lean meats will best furnish it; if heat-givers and force-producers are desired, fatty meats and bacon are best. Meat twice cooked loses considerably both in digestibility and flavor. For the meaning of the terms "Albumenoids" and "Potential Energy," see the article on the "Composition of Foods."

Cold Meat.—Cold, sliced meats are much relished by many, but need not, necessarily, be entirely cold when served, especially in cold weather. Arrange the slices neatly on a platter, then set the platter in the oven with the door open, and warm just enough to take off the chill, but not to start the fat from the meat. Serve it with tomato or chili sauce. Cold meat cuts better after it is entirely cold.

Remember that in re-warming all kinds of meat, it must *not* be re-cooked, as that has a tendency to harden it. By placing thinly cut bits of cold meat in a hot dish, or platter, and pouring over it the hot sauce or gravy, and then serving in hot plates in cold weather, the meat will be sufficiently heated. Cold butcher's meat of all kinds can be treated in this way; also fish, shell-fish, poultry and game, each covered with its appropriate hot sauce or gravy. Mutton particularly calls for hot plates nearly all the year round, as the fat hardens immediately on a cold plate.

Gravy.—Gravy differs from a meat sauce in that it is made of the juices which drip from roasted or baked meats; or from those extracted in the process of frying or sautéing; or from the broth from boiled meats, in contradistinction from a sauce made from something foreign to the meat.

Gravy for roasted meat is made by adding water to the dripping-pan in which the meat is roasted; the juices of the meat which have dried and browned on the sides of the dripping-pan, should be thoroughly stirred down into the pan with a spoon, as this gives color and flavor to the gravy; the surplus fat must be dipped off, but a small portion left in gives the needed fat and richness to the gravy without the addition of butter, and will be thoroughly blended through it by the addition of the thickening. The thickening is made by mixing flour or corn-starch with a little cold water, and stirring it into the boiling contents of the dripping-pan, which is placed on the top of the stove or range, immediately upon taking up the roast. Most cooks of the present day use corn-starch, which cooks free from lumps; others prefer the flavor of flour thickening, even if it necessitates the straining of the gravy; browned flour, or browned flour and butter, called brown roux, or white roux, which is raw flour and butter already mixed, is used by professional cooks. Gravies should be kept hot in a sauce-pan, after straining, until sent to the table, for a cold gravy is an abomination.

Gravy for meat fried in a frying-pan is made in the same way, by adding a little hot water to the pan after the meat is taken up, then thickening it as above; there is usually no surplus fat when meat is cooked in a frying-pan, as only enough fat is used to keep the meat from sticking to the pan.

Gravy for boiled meat is made by dipping the required quantity of broth from the top of the pot, together with a portion of the fat, then thicken and season as for other gravies. A spoonful of any one of the various meat sauces may be added to gravies for seasoning if preferred.

Do not spoil gravies with high seasoning of any kind, for the best gravy is that in which the flavor of the meat is best retained. The English method of making gravy with meat-liquor or soup-stock is as follows: When roasting beef, mutton, lamb or pork, pour off into a dish, $\frac{1}{2}$ hour before dinner time, all the contents of the dripping-pan, and set them away in a cool place; then put into the pan 1 or 2 cups of the meat liquor or stock; if you have cold gravy or drippings of a previous day, take off all the fat from the top, and put the liquid which is left, into the pan. Wetsome browned flour smooth, and when you take up the meat, set the dripping-pan on top of the stove; the gravy will at once boil up, and the wet flour must then be stirred in. Do not let it stand too long, as it will boil away fast.

With veal and venison, there is but little fat, and that is not gross, and so the

gravy is made differently. When the meat is first put to roast, put some meat-liquor or stock in the dripping-pan, and add a little more as it boils away. When the meat is done, set the dripping-pan on the stove, and, having stirred in the wet flour as before, add a piece of butter $\frac{1}{2}$ the size of an egg, and stir until it is all melted or it will make the gravy oily.

For poultry, the gravy is made by boiling the giblets by themselves in a little water; skim it carefully, as a good deal of scum will rise. After 1 or $1\frac{1}{2}$ hours, take them out and pour the water into the dripping-pan; mash or chop the liver fine, and when you make the gravy, add this and a bit of butter, some pepper, the wet flour, and, if you choose, a little sweet marjoram.

The fat that roasts out of a turkey should be dipped off with a spoon before these ingredients are added; it is too gross to be palatable.

For goose gravy, pour off all the drippings as directed for beef or pork, and put in some of the meat-liquor or stock.

To Brown Flour.—Some cooks keep browned flour on hand for gravies and soups, and think it gives a better flavor and color than white flour. Prepare it as follows: Put about a quart of flour into a spider and set it into the oven or on top of the stove; stir it often lest it should burn. When it is a light brown color, set it away for use, in a jar or wide mouthed bottle, keeping it corked.

Garnishing meat adds much to its appearance. Slices of carrots are suitable for hot or cold boiled beef. Mint is used for hot or cold roast lamb, either with or without parsley. For roast veal and calf's head, slices of lemon are used. For boiled meats or stews, use capers, boiled onions or pickled gherkins. For roast beef, horse-radish is often used. Slices of red beet-root go well on boiled beef or cold meat, and for poultry, fish, cold meats, etc., parsley is very generally used.

Slices of lemon served with a plate of beefsteak will impart a pleasant flavor to it, and those who like onions will relish beefsteak served on a platter that has been well rubbed with a raw onion.

BEEF.

Beef is probably the best and most wholesome, as it is certainly the most economical meat that can be purchased for family use. Very lean beef is of inferior quality, while that which is very fat is objectionable because it is so wasteful.

Before boiling salted beef, it should be soaked in a quantity of water over night; then put it on in cold water and it is much better for a long, *slow* boiling.

Beef Balls.—Chop fine some cold beef, mix with the meat 1 or 2 well-beaten eggs, according to quantity of meat; a bit of chopped onion, a little melted butter, salt and pepper; flour your hands, roll into balls the prepared meat, and fry in hot lard.

Chipped Beef.—Heat together 1 cup each of milk and water, and thicken with a beaten egg and a little flour; when it has boiled 5 minutes, add a quantity of chipped beef; stir in well and remove at once from the fire.

Beef or Veal Cheese.—Boil and skim beef until the meat and gristle drop from the bone; chop the meat fine, season with pepper, salt and sage, and put in a deep dish; take all the fat from the soup and boil it away some, then pour it over the meat, stir well, and set away to cool and harden. Cut in slices and eat cold.

Corned Beef.—Corned beef, if very salt, may be freshened for 24 hours, then put in kettle with 3 chopped onions, 2 carrots, (cut up), a little pepper, and a tiny pinch of cloves. Stew until tender; thicken the gravy with 2 tablespoons flour stirred to a paste in $\frac{1}{2}$ teacup cold water. Serve hot, with mashed potatoes and chopped cabbage.

Beef Daube (do' be).—Have a slice cut from the top of the round of beef, 3 or 4 inches thick; take out the bone, cut places all over it an inch or two apart (doing

it as evenly as possible) and place little squares of salt pork in each cut; put it in a deep frying-pan or baking-tin with a little water, cover tightly, and bake, or simmer on the stove for an hour; then turn it in the pan, season with a little salt, pepper, and herbs if liked, slice on an onion, 2 or 3 potatoes, a small turnip, and a carrot, cover again, and bake or simmer until the vegetables are done. Serve with sour apples, baked or fried. Economical.

Deviled Beef.—Take 2 lbs. round steak, chopped fine, add a cup of bread crumbs, $\frac{1}{2}$ a cup of sweet milk, a good tablespoon of butter, a good teaspoon of salt, a little pepper. Mix and put into square, deep tins, and bake about $\frac{3}{4}$ hour. It slices nicely when cold.

Dried Beef.—This is commonly served as an appetizer, sliced very thinly, and eaten raw. It is cooked by slicing thinly, or rather shaving it as for a relish, then put it in a sauce-pan and scald with just boiling water enough to cover it; let it scald 4 or 5 minutes, then drain off the water, and add $\frac{1}{2}$ pint of cream; when this gets hot, thicken it with a little corn-starch in cold milk; when thoroughly hot, serve in a hot dish. Milk may be substituted for cream, and a little butter added to season it, or the yolk of an egg. This is a convenient and economical dish for a small family living at a distance from a market. Serve with either boiled or baked potatoes.

Dried Beef Relish.—Cut dried beef very fine, put it in a sauce-pan with a little hot water and let it simmer on the stove a few minutes; add a little butter, toast slices of bread a nice, delicate brown, and spread the beef over the slices of toast. If the dried beef is very salt, turn off the hot water after standing a few minutes; then add a little more to prepare it.

Fillet of Beef.—This is the under side of the loin; take out the bones. After trimming and larding, put into a pan, in the bottom of which are some small pieces of beef suet; sprinkle with salt and pepper; add 1 cup of water. Bake in hot oven 30 minutes; baste often with hot water.

Frizzled Beef.—Take 2 cups of sliced dried beef, $\frac{1}{2}$ cup of butter, 6 cups of sweet milk, 6 even tablespoons of flour, $\frac{1}{2}$ teaspoon of pepper, and 12 small slices of bread. Brown the butter slightly, add the dried beef and let it cook until it curls at the edges; stir in the flour dry, add the milk and pepper, stirring constantly until it boils; turn it over the bread and serve.

Beef Heart.—Cut open the heart, rub well outside and in with salt; make a nice dressing the same as for chicken, stuff the heart and sew it together. Roll a nice round steak around it and tie; season well with pepper and salt. Then put a plate in the bottom of a kettle, put in the heart, cover with water, and cook until tender. When about done, take it out and put into a dripping-pan, pour over the juice in which it was cooked, and place it in the oven to brown. Make a nice gravy to go with it. Excellent.

Hunters' Beef.—Take 25 lbs. of round of beef, 3 oz. of saltpetre, 3 oz. of the coarsest brown sugar, 1 oz. of cloves, 1 nutmeg, $\frac{1}{2}$ oz. of allspice, 3 handfuls of common salt—all in the finest powder. Take the bones from about 25 lbs. of a round of beef, and let it hang for 2 or 3 days. Then rub the above ingredients well into it every day for 2 or 3 weeks, turning it every morning. When ready to be dressed, dip it into cold water to take off the loose spice, bind it up tightly with a wide tape and put it into a pan with a crust of flour and water; set it in the oven and bake it 6 hours. When it is cold, take off the paste and tape, glaze it and garnish it with savory jelly. The gravy is very fine, and adds greatly to the flavor of soups, hashes, etc. It keeps good for some time.

Beef Kidneys.—Cut the kidneys in 2 slices, lengthwise; soak an hour in salted water, then wipe dry; dip them in a beaten egg, roll in cracker dust, and broil over a clear fire.

Kidneys may be stewed until tender in a very little water, and seasoned; then thicken the broth, and serve.

Stuffed Liver.—Scald slices of liver in boiling water with a little salt; make dressing as for poultry; put a layer of thin slices of salt pork on the bottom of a deep baking-dish or the short-handled frying-pan; then spread half the liver on the pork and place the dressing on it. Cover the dressing with the remaining half of the liver, cover with a pan or plate, and bake an hour.

Deviled Liver.—Chop very fine 3 lbs. of liver and $\frac{1}{4}$ lb. of salt pork, both uncooked. Then mix $\frac{1}{2}$ pint of bread crumbs, 3 tablespoons of salt, 1 teaspoon of pepper, $\frac{1}{2}$ teaspoon of cayenne, and $\frac{1}{2}$ teaspoon of mace and cloves; add and mix well with the chopped liver and pork; put it in a covered sauce-pan, and set that in a sauce-pan of cold water. Cover the sauce-pan and place on the fire to boil 2 hours. Take out the mold, uncover, and let it stand in an open oven to let the steam escape. This is a cold dish.

Beef a la Mode.—Cut the bone from a round of beef, and fill the space with bread and butter dressing, or a dressing made with onions and spiced with herbs. Put a bandage around it to keep it in shape, and put it in a pot just large enough to hold it; add about a pint of water, cover tightly, and bake 3 hours. Good either hot or cold.

Mock Duck.—Take a good piece of upper round steak, make a dressing as for turkey, and spread it over the steak; roll it up and wind it with a string. Bake it as you would roast beef, but not so long. It can be served hot, or allowed to cool with the string around it, when it can be cut in thin slices for luncheon or tea. If served cold, garnish handsomely with sliced lemon and green parsley.

Mock Duck, No. 2.—Make a dressing the same as for turkey, put it in a round of beefsteak which has been salted and peppered, and sew it up; then roast it with 2 or 3 slices of salt pork on top, and baste it frequently. It will be equal to duck.

Beef Omelet.—Chop finely 1 pound of raw beef; roll 3 crackers to a powder, and mix with them $\frac{1}{2}$ teaspoon of baking powder; beat well 2 eggs, and then mix all together with a seasoning of salt, pepper and powdered herbs; put a piece of butter the size of an egg in a pudding-dish, let it just melt, then place the mixture in a cake in the dish, flatten down into a flat cake in the bottom of the pudding-dish, and bake $\frac{1}{2}$ hour. Take it up on a hot platter, spread the top with soft butter, and send to the table hot. Good for supper or breakfast in cold weather. For breakfast, serve hot cornmeal muffins with the omelet.

Beef Pot Pie.—A good dinner which combines the needed variety of foods in 1 dish, is a beef or mutton stew. Two pounds of cheap meat, neck of mutton, shin or round of beef, is enough for 4 to 6 people. Cut the meat in inch pieces, season with salt and pepper, and roll in flour. Put the bones in cold water and heat slowly; when boiling, put in the meat, already browned in a frying-pan, with a little hot fat. Add 1 or 2 small onions sliced and fried with the meat, if liked; a stalk of celery, or $\frac{1}{2}$ cup of strained tomato, also gives a nice flavor. Simmer an hour, then add a medium-sized carrot and turnip, cleaned and cut in $\frac{1}{2}$ inch squares; cook 2 hours, or till the meat is tender; $\frac{1}{2}$ hour before serving, put in 6 potatoes already pared, quartered and parboiled to draw out their strong juice. Taste and season more if liked, and skim all fat from the top; 10 minutes before

dinner-time, put in the dumpling and cook without removing the cover. The *Dumplings*: 1 pint of flour, $\frac{1}{2}$ teaspoon of salt, 2 teaspoons baking powder, sifted together and mixed into a soft dough with 1 cup more or less of milk or water. Drop from the tip of the spoon into the boiling stew, cover closely, and in 10 minutes take up on a hot platter or place around the platter on which the stew is served.

Pot-roast of Beef.—Take 5 or 6 pounds of the round of beef, remove the bone, put slices of suet in the bottom of a deep pot, and fry out the fat; leave the bits of suet in the bottom of the kettle, put in the beef in a round shape, and add a pint of hot water; put on the stove where it will cook slowly. Cover well after sprinkling on a little salt, pepper, and sweet herbs, if liked. It should cook 2 or 3 hours, and at last uncover it and rapidly cook out all the water, until it begins to fry in the bottom of the kettle; when it is nicely browned on the bottom, take up on a platter, the browned side up, and pour over it any fat left in the pot. Good, warm or cold. Cut in thin slices it makes nice sandwiches.

Pressed Beef.—Take any kind of beef, stew it till the bones fall out, pick it over carefully, removing all gristle, and chop finely. Season to taste with pepper and salt, and add any herbs or spices desired. Put it in a brick-shaped pan with a flaring top, put another pan on top, and weight with flat-irons or other convenient weight. When cold, serve in slices. Thus prepared, cheap and tough pieces of beef may be made delicious.

Roast Beef.—The best pieces for roasting are the first and second cut of the sirloin. The next to be preferred are the first cut of the rib and the back of the rump. Dredge with flour, salt, and pepper, place in dripping-pan with very little water; baste frequently. If a large piece of beef (10 or 12 pounds) allow 15 minutes to every pound; a small piece, 10 minutes to every pound. Make a gravy of the dripping. After carefully skimming off all the grease, pour the remainder into a sauce-pan, mix a little brown flour carefully so as not to have any lumps, and stir into the liquid while boiling; boil 3 minutes and it is ready to serve.

Roast Beef and Yorkshire Pudding.—Into 2 cups flour mix 1 teaspoon baking powder, and a pinch of salt; add 1 cup milk, beat till smooth, and add another cup of milk. Put it in hot gem-pans and bake; baste it with beef drippings. Serve it with the roast beef. The batter is often poured under the beef to bake, but this is a better way.

Spiced Beef.—Boil 2 or 3 pounds of fat beef slowly until the bones will easily separate from the meat; then take it out, take out all the bones, and chop the meat (fat and lean together) while hot; season with salt, white pepper and sifted sweet herbs—sage, thyme, parsley, or any best liked. Mix all thoroughly and put in a brick-shaped bread-pan to become cold for the next day. The broth can be used for a soup the next day. Serve the spiced meat, cut in slices, with potatoes, baked, or cooked in any way liked.

Boiled Tongue.—If the tongue is salted, soak over night in plenty of cold water; the next morning put it over the fire with enough cold water to cover it, and boil slowly 3 or 4 hours, according to the size; skin the tongue while hot and set away to cool. When cold, cut in very thin slices, excepting the extreme tip, which can be used for making side dishes. If the tongue is fresh, then soak it over night in cold water in which is a handful of salt; the next morning put it over the fire and cook slowly, and proceed in the same manner as with salted tongue.

Tripe.—Tripe is usually sold already boiled and pickled, and is a good food if cider vinegar is used for a pickle; if any of the mineral acids are used, it will unfavorably affect the digestion. After coming from the market, it is sometimes broiled, spread with butter, and served with baked potatoes. It can be put on a platter and set on the grate in the oven until hot and then spread with butter; again, it can be fried brown in the frying-pan with a little butter, and seasoned with any of the piquant meat sauces. It may also be cut in strips, soaked 10 or 12 hours in salt and vinegar, wiped dry, and fried in hot lard. It can be stewed also.

Fricassee of Tripe.—Cut in narrow strips 1 lb. of tripe and add to it 1 cup of milk, or part water; put in a piece of butter the size of an egg, season with salt and pepper, and thicken with 1 tablespoon of flour, stirred with a little cold milk or water. Let it simmer gently for $\frac{1}{2}$ hour, and serve hot. It may be improved by a bunch of parsley cut small and put with it.

Beefsteak.—*Broiled Steak.*—Grease the gridiron with suet. Have it hot. Put on the steak over hot coals. In a moment, when the steak is colored, turn it over. Watch and turn frequently. Do not let out the juice by sticking a fork in it. Remove to a hot platter. Sprinkle well with salt and pepper and butter well. Set platter into oven a few minutes, to let butter soak well in. Serve hot. The juice of a good steak is inside of it—not a gravy in the dish.

Broiled Chopped Beefsteak (called Salisbury steak).—Take 2 lbs. of raw beefsteak and chop fine in a chopping-bowl; then press together in flat pieces, each one large enough for 1 person, and broil over a bed of coals. This is nice for an invalid or person with poor teeth, especially if tender steak cannot be had.

Beefsteak and Oysters.—Broil the steak the usual way. Put 1 qt. of oysters with very little of the liquor into a stew-pan upon the fire; when it comes to a boil, take off the scum that may rise, stir in 3 ounces of butter mixed with a tablespoon of sifted flour; let it boil one minute until it thickens; pour it over the steak and serve hot.

Beefsteak Pie.—Put about 2 pounds of steak (round steak will answer) into a sauce-pan with a gill of water; put on the cover and simmer for an hour; then cut the steak into small pieces about $\frac{1}{2}$ inch square; put them into a white pudding-dish, thicken the juice with a tablespoon of corn-starch, season with salt, pepper, and herbs, also with garlic or onion if liked, and pour it over the meat; then cover with a rich pie crust and bake until the crust is a rich golden brown. This is good to serve at luncheons. A less expensive pie can be made by covering the meat with a nice baking-powder biscuit dough. Bake this also until it is nicely browned.

Beefsteak, Rolled.—Put a slice of round steak on the meat-board, sprinkle on a little salt and pepper, and put on bits of butter, with a little chopped onion if liked, and a little sifted sage; spread over it mashed potatoes, or sliced raw potatoes, and roll it up; wind with a string and fasten the ends with skewers; put in a baking-pan with a pint of water and bake slowly an hour; baste often.

Beefsteak Smothered in Onions.—Cut 6 onions very fine, put them in a sauce-pan with 2 cups hot water, 2 oz. butter, some pepper, salt, and dredge in flour; let stew until the onions are quite soft. Have the steak broiled, put it into the sauce-pan with the onions, let simmer 5 or 10 minutes; send to the table very hot.

Hamburg Steak.—Lay your beefsteak on the meat-board, salt and pepper it as required; peel and slice a few onions and cover the steak. Then with chopping-knife chop all together until like hash, and fry in hot fat, either in balls like

sausage, or plain. Leave out the onions unless you know every one at the table likes them. This is delicious.

Boiled Dinner.—Boil the corn-beef early in the day; when tender, take it out and skim the fat off the meat liquor; then, long enough before dinner for them to cook nicely, put into the boiling meat liquor the carrots first, having them washed and scraped; a little later put in the cabbage which has been quartered, and the turnips which have been pared and sliced; last, about $\frac{1}{2}$ hour before dinner, put in the potatoes (peeled) and a crook-neck squash, peeled and sliced. Boil the beets by themselves. When done, take up the vegetables, put the cabbage in a colander and press out the water, cut up the carrots, and serve the meat and vegetables separately. Try and serve them as attractively as possible. This is better than boiling meat and vegetables together.

MINCED BEEF.

2 cups of cold minced beef.
1 shallot, or small onion.

1 bunch of parsley.
1 teacup of gravy.

1 tablespoon of Chutnee sauce.
Butter the size of an egg.

Put the butter in a sauce-pan, slice and fry the onion until a yellowish brown, add the gravy, then the chopped parsley; stir in the chutnee, add the beef, and let it get hot, but do not re-cook. Serve it on a platter garnished with parsley and fried bread.

Mock Sausage.—Take 1 lb. of cold beef and chop fine; then take 3 tablespoons of chopped or mashed potatoes, 1 egg, 1 tablespoon of flour, and a small slice of bread; moisten the bread with milk or water, stir all together, add salt, pepper, and a little sage, or chop an onion in. Make in small balls, and shape like slices of sausage. Fry in a little hot fat like potato balls, and when brown on one side, turn over and brown the other.

Sausage Roll.—Make a dough as for baking powder biscuit; roll out and cut in large rounds with a large biscuit cutter; lay fine sausage meat on half of each piece, turn the other half over and pinch together; lay close together in a baking-tin or dripping-pan, and bake $\frac{1}{2}$ hour. These are good either hot or cold.

Potted Meat or Fish.—All kinds of meats can be potted, and the same general principles hold good for all. Take the cooked meat or fish, remove it from the bones, clear away all skin and gristle, and pound it in a mortar. It should be well pounded, reduced to a smooth paste, and no unbroken fibre left. Then add spices, pepper, salt, made mustard, mace and cayenne; the amount used varies. If it is intended for immediate use, add the spices sparingly; if to be kept some time, spice highly. Then moisten with melted butter, and press the mixture down in small pots or jars of stone or earthenware, and let it get thoroughly hot in the oven; or better, steam it 30 minutes in the steamer. Then press down again and cover with hot clarified butter or beef suet, and tie paper dipped in egg over the top. Game of all kinds, fish and beef, are best put up alone, but chicken or veal can be mixed with tongue or ham. This potted meat can be used in slices, or for sandwiches, and as it will keep for weeks if properly put up, it offers a change from hashes or stews, for using remnants of food which are left over.

Preserving Meat.—In cold weather when meat is plentiful, it can be preserved for a long time by treating it in the following manner: Take large pieces of the fore-quarter of beef (the cheap pieces of the neck and shoulders); boil it slowly in just water enough to cover, until it is tender; add a little salt for the last hour; let it stand until quite cold, then mince it finely; season well with pepper, and last, pack tightly in a stone jar, put a few whole cloves on the top, then pour over it

hot, melted beef suet. When this gets cold, cover the jar with a cloth, then with the cover, and store in a cool room. This is ready to use for mince pies, and for slicing to put in a potato pie, or it can be cut in slices and served cold with hot baked potatoes, for breakfast.

VEAL.

Veal should be thoroughly cooked, for cases are not uncommon of illness arising from eating under-done veal. The flesh is rather indigestible. No meat is more useful for making stews and gravies than veal. It needs much seasoning as it is deficient in flavor, and while it is richer in gelatine than beef, it has less nitrogen. It contains the least heat producing elements of any meat, and is best eaten with bacon and jelly, rice or potatoes, etc., which supply the elements it lacks.

Old Veal.—This is most delicious meat and but little known. It is a calf kept yarded near the house, fed liberally with skimmed milk, vegetables of all kinds, and fattened to the age of 5 or 6 months in this way, then killed in the fall when the vegetables are gone. It is dressed and used like beef.

Breakfast Veal.—Butter a small oval dish very thoroughly, and fill with bits of cold, stewed veal, seasoned with pepper, salt, and a little nutmeg; put in alternately with layers of bread crumbs; moisten with gravy, put bits of butter over the top, and bake. When it is brown, turn out of the dish on a hot platter and garnish with parsley. If not too moist, it will keep its form when turned out.

Veal, Creamed.—Chop cold veal, or cut in small, thin slices, leaving out the stringy part for your stock kettle. If you have a pint of meat, it is enough for a handsome dish. Put 1 teacup of rich milk into the teakettle pail, and, when hot, add 1 tablespoon of flour and 1 of butter, braided together. Let it boil up, and then stir in the veal, seasoned with pepper, salt, a pinch of mace, and a slice of onion. When hot, pour on a platter edged with leaves of puff pastry, and lay a few on the top of the mince. The leaves can be made of remnants of pastry when you are making pies.

Calf's Brains.—Remove all the fibrous membrane which covers them, and throw into a pint of cold water containing $\frac{1}{2}$ teaspoon salt and 1 teaspoon vinegar. Boil 3 minutes, and plunge into cold water. When cold, cut into small pieces, season with salt and pepper; egg and bread-crumbs, and fry in a little hot drippings. They may be prepared early in the day if for dinner, or the night before if for breakfast, and they may be served plain or with tomato sauce.

Veal Cutlets, Breaded.—Egg and bread-crumbs the cutlets, and fry them in smoking hot fat, turning them until well done. Then take up and pour over them a good brown gravy; serve hot. They may be garnished with parsley.

Calf's Liver, Fried.—Cut the liver in thin slices, pour hot water over, to blanch it; let stand in the water while you fry the fat from $\frac{1}{2}$ dozen slices of breakfast bacon; take out the bacon and cut a large onion in slices and fry brown; then fry the liver, after drying it in a cloth; after the liver is brown on both sides, sprinkle over it a little salt and a teaspoon of curry powder; cover and stew 20 minutes.

Calf's Liver, Stewed.—Wash and lard a calf's liver; chop 1 turnip, 1 carrot, 1 stalk of celery, and 1 onion, and place them in the bottom of a deep baking-pan; place the liver on top, sprinkle salt and pepper over the whole, and pour on a pint of boiling water; cover the pan, and place in a moderate oven for two hours; when done, remove the liver, put a teaspoon of butter into a frying-pan, and place over the fire to heat; add the liquor strained from the vegetables, and a little flour, stir

until it begins to boil, then add a tablespoon of Worcestershire sauce; pour over the liver and serve at once.

Roast Fillet of Veal.—Bone the joint, make a deep incision between the fillet and saddle, and fill with dressing made as for poultry; bind the joint in round form and fasten with skewers and twine, and roast slowly. Baste well with butter, dredge over a little flour, and butter well; make gravy of drippings, with the juice of a lemon added; garnish the platter on which the meat is served with slices of lemon and parsley.

Veal Loaf.—Chop $3\frac{1}{2}$ lbs. of lean and fat raw veal very fine, with 1 slice of salt pork; add 6 crackers rolled fine, butter the size of an egg, 2 eggs, 1 tablespoon of pepper and one of sage; mix this thoroughly and pack it tightly in a deep, square tin; sprinkle over the top a little melted butter and fine cracker crumbs. Cover it with another tin and bake 2 hours; uncover and brown the top. Serve cold in thin slices. This is very nice for a picnic lunch.

Veal Mayonnaise.—Cut pieces of cold veal into bits, not as small as dice; put in an equal quantity of celery, cut in small pieces; mix thoroughly, and pour over it a little of the dressing, reserving the rest to put over the top when it is arranged in the dish; garnish with lettuce leaves, and hard-boiled eggs cut in slices. Lettuce can be substituted for celery.

Molded Veal.—Cut thin slices of cold roasted veal, put them in the bottom of a pan, season with pepper, salt, and chopped celery; add a layer of hard-boiled eggs sliced thin, then a layer of thinly-sliced, cold boiled ham, and in this way fill the pan. Pour over it enough stock to cover the meat, and bake in the oven 1 hour. Let it stand until cold, and serve in thin slices.

Veal Pot-pie.—Take 2 or 3 pounds of fat veal, cut it in small pieces, and put over the fire in cold water. When it comes to the boiling point, skim well, then cook slowly about an hour; do not boil rapidly, as that tends to make the meat hard. At the end of an hour sprinkle with salt and pepper, and add a sliced onion if liked by all, and a handful of washed rice to thicken it a little. Pare and slice enough potatoes for the family, and add to the stew; when the broth boils again, after putting in the potatoes, add dumplings made of baking-powder biscuit-dough, or crusts made from recipe for pot-pie crust.

Pot-pie Crust.—One pint sour milk, 1 teacup sour cream, 1 teaspoon soda; mix hard like bread, let it stand 1 hour to rise; never roll nor cut, but nip it off in pieces the size you want, let boil 30 minutes, without lifting the lid, and you will always have them like a puff.

Veal-and-Ham Pie.—Cut the veal into very small pieces and put a layer on the bottom of a pudding-dish; sprinkle over it a seasoning of salt, pepper and powdered herbs (sage, thyme, summer savory, etc.); then lay on thin slices of cold boiled ham, fat and lean together, then another layer of veal, and so proceed to fill the dish; pour in enough cold stock or water to cover the meat, having sliced ham on the top; cover the top with a thick puff paste, and bake an hour in a hot oven. Put a dish of hot water in the oven to prevent scorching the crust. When this is cold, it should be a firm jelly inside.

"It's a veal-and-ham pie," said Mr. Boffin. "Is it indeed, sir? And it would be hard, sir, to name the pie that is a better pie than a veal and hammer," said Mr. Wegg.

Roast Veal Pie.—Cut cold roast veal into slices, with the stuffing, and lay them in a deep dish, adding pepper and salt; dredge lightly with flour, and put in the gravy that was left, with a little hot water added to it; a dish that holds

3 pints will require 1 cup of gravy. Cover the top of the pie with a crust made as follows: *Crust*.—One pint of flour with 2 teaspoons of baking-powder sifted through it; add a piece of butter as large as $\frac{1}{2}$ an egg, rubbing it into the flour with the hand. Wet with some sweet milk, enough to make a dough as soft as you can handle it. Different qualities of flour differ in the quantity of wetting required.

Scalloped Veal.—Mince cold veal very fine. Put a layer in the bottom of a buttered pudding-dish, season with pepper, salt and a very little nutmeg; then put in a thin layer of fine cracker crumbs, then another layer of meat, and so on until the dish is full. Wet with good broth; if you have no broth, make a little by boiling the bones and trimmings of your veal. Put over the top a layer of cracker crumbs, wet into a paste with a little milk, and mixed with a beaten egg. If your oven is not very slow, it is best to cover the dish with a pan for the first $\frac{1}{2}$ hour, and then let it brown 10 minutes after you uncover it.

SPICED VEAL.

3 lbs. veal cut fine.	1 large slice fat pork.	3 eggs beaten well.
3 Boston crackers rolled fine.	$\frac{1}{2}$ teacup of catsup.	1 lemon, rind and juice.

The salt and pepper should be mixed with the crackers; mix all, moisten with water and butter. Bake 2 hours.

Smothered Veal.—Place in the bottom of a baking-pan 3 or 4 potatoes sliced, 1 small onion sliced, 2 slices of salt pork cut into strips; season with salt, pepper and sage; place over this 3 or 4 pounds of veal from the breast, or any other part desired; cover the meat with sliced potatoes, onion and other seasoning; sprinkle over all a tablespoon of flour, add a pint of water, cover the pan with another one, and place in the oven and cook $1\frac{1}{2}$ hour, adding water if it cooks dry.

Veal Stew.—Cut up 2 pounds of veal, and after having washed it carefully, put it in the dinner-pot; add 3 pints of water, put in 1 onion, pepper and salt, and let it stew an hour; then add sliced potatoes, and take a crust made with a pint of flour, a cup of sour milk, and $\frac{1}{2}$ a teaspoon of soda sifted through the flour, a pinch of salt; cut up in squares, dust a little flour over them, lay them in on top, cover closely and cook $\frac{1}{2}$ an hour.

Veal Toast.—One cup of chopped veal, 1 cup of hot water, a piece of butter as large as a butternut, 1 teaspoon of salt, and $\frac{1}{4}$ teaspoon of pepper. Have ready on a platter slices of bread toasted brown, and buttered; if the crusts are hard, dip the edges in hot water. When the minced veal is thoroughly hot, pour it on the toast, and serve at once.

Sweetbreads.—At once on coming from the butcher (and that should be as soon as possible after the animal is killed) sweetbreads should be soaked 1 or 2 hours in cold water, and then cooked about 20 minutes in boiling water containing 1 teaspoon each of salt and lemon juice; then plunge them into cold water to harden them; take out and put into a towel to drain out all the water, and remove the pipes and membranes. They may then be cut into thin slices and broiled; or egged and bread-crumbed and fried in hot fat; or sautéd; or stewed in a very little water, and seasoned with salt, pepper and butter. Serve with any of the meat sauces best liked by the individual.

Sweetbread Croquettes.—After preparing 2 pairs of sweetbreads as above, cut them into dice, and also cut up and add $\frac{1}{2}$ box of mushrooms. Into a sauce-pan put 1 large tablespoon of butter, and when it bubbles, sprinkle in 1 tablespoon of flour; cook well and add $\frac{1}{2}$ cup cream or soup stock; heat and add the sweetbreads and mushrooms; when well heated, lift from the fire and add yolks of

2 eggs well beaten; form into croquettes when cool, then egg and bread-crumbs, and fry in smoking hot lard.

Creamed Sweetbreads.—Prepare as above, and then with a silver knife pick them in pieces; then put 1 tablespoon butter in the sauce-pan; melt without browning it, add 1 tablespoon flour, stir till smooth; add 1 cup cream and the sweetbreads, stir till it thickens; lift from the stove, season with salt and pepper and serve.

Sweetbreads consist of the *Thymus Gland* found in the neck of veal and lamb. It decreases in size and flavor as the animal grows older. The glands are found in the back part of the throat and in the breast. There should always be 2 of them, although they are sometimes sold separately. The heart sweetbread is so called because it lies nearest the heart. It is the lower one and is round in shape. The throat sweetbread is the upper one, and is long and narrow. They are a great delicacy (those of the calf are most esteemed) and if properly prepared make a fine dish to tempt the appetite of the invalid, although opinions differ somewhat as to their digestibility. The pancreatic gland of the bullock (that is, the gland near the stomach which secretes the pancreatic juice which aids in digesting the food) is sometimes sold as sweetbreads, but it is inferior in quality to the thymus gland of young animals, and requires long and careful washing and cooking.

MUTTON AND LAMB.

Within the limits of wholesomeness, mutton varies immensely in quality and flavor. It is often thought more digestible than beef and is therefore prescribed for invalids. All young meat is less digestible and is also less nourishing than full-grown, but lamb has a better repute in this respect than veal. Although mutton may be served rare, lamb should be thoroughly cooked always. The strong flavor of mutton, which is disagreeable to many, comes from the penetration through the skin of the oil from the wool; the thin outside skin should be taken off before cooking the meat. Mutton should always be served on hot plates in the winter, never allowing any cold mutton tallow to appear on the edges and disfigure the dish.

Boiled Mutton.—Cut off the superfluous fat from a breast of mutton, remove as much of the bone as will bring it into shape for the kettle, add water to only half cover it, and cover the kettle tightly; let it boil gently for an hour, then turn it in the kettle, and season with salt, pepper, and herbs if liked. Add a little more water if needed, and boil for another hour; then serve with caper sauce.

A *mutton ham* can be boiled in the above manner with another half hour's time. A *leg of lamb* also can be cooked in this way in about an hour and a half.

Mutton Chops.—Remove a portion of the fat and trim them into a nice shape; place the gridiron over a bright, clear fire, rub the bars with a little fat, and lay on the chops. Whilst broiling, frequently turn them, and in about 8 minutes they will be done. Season with pepper and salt. Serve hot on a hot dish. Or they can be baked in a dripping-pan in a hot oven, basting frequently; they are very nice this way. They can also be fried on a frying-pan, having it very hot, and using no other fat than that from the chop. As soon as one side is seared (in about 1 minute) turn over on the other; then finish the cooking more slowly. Sprinkle salt on each side when almost done.

Mutton and Rice.—Mince into dice, pieces of cold mutton or lamb; add 1 cup of cold boiled rice to 1 cup of meat; butter the sauce-pan thoroughly, pour in a little water, add the mutton and rice, and stir until it is hot; then pour in 2 eggs slightly beaten, and stir until the eggs are cooked. Season with salt and pepper to taste.

Mutton Patties.—Mince cold mutton, fat and lean together, and season with salt and pepper; if the mutton is lean, add a piece of butter and warm all together in a sauce-pan, with a little water to make it moist; put it in patty-pans,

and cover the top with mashed potatoes; put a bit of butter in a little dent in the center and bake in the oven to a delicate brown. Serve hot in the patty-pans.

Mutton Pies.—Mince coarsely, cold mutton, fat and lean together, and put in the bottom of a pudding-dish. Sprinkle with salt and pepper, with a little butter if the mutton is not fat, then cover deeply with hot mashed potatoes; set in the oven to brown a little, and to let the pudding-dish get thoroughly hot. Serve with hot plates.

Warming cold minced meats, as a pie with mashed potatoes, is one of the best ways of re-warming any kind of fish or cold meat—the most appetizing and the most economical.

Mutton or Lamb Pie.—Cut finely, bits of raw mutton or lamb; put to stew in just water enough to cover, and cook slowly until the bones, if there are any, will separate from the meat. Put them in a pudding-dish, season and thicken the gravy, and pour over the meat in the baking-dish. Make a nice baking-powder biscuit-dough, and cover the pie; bake until the crust is a golden brown.

Mutton Rechauffe.—Slice an onion and fry it brown in the pan, with a little good butter; then put in a pint of good stock, or water, if you have no stock, and let it come to boiling. Thicken with a teaspoon of corn-starch wet in a little water. When it has boiled, strain out the onion, and add salt and pepper to taste. Have cold sliced mutton on a hot platter; pour the hot sauce over it, and send to the breakfast table with hot plates.

Scrambled Mutton.—Take 2 cups of cold chopped mutton or lamb, 2 table-spoons of hot water, a piece of butter the size of an English walnut. When the meat is hot, break into it 3 eggs and cook until the eggs begin to stiffen, stirring constantly. Season with pepper and salt.

Irish Stew.—This is a nice and economical dish, and can be made from any kind of meat, the best being the best end of the neck of mutton. Remove nearly all the fat from 2 lbs. of meat, and cut it into chops. Peel and slice 3 lbs. potatoes, and also slice $1\frac{1}{2}$ pounds onions. Put a layer of potatoes in the kettle, then a layer of onions, then meat; pepper and salt it well, and so put in all the materials in layers. Add 1 or 2 cups water, cover closely, and let it stew (*not* boil) 2 or 3 hours.

Scotch Stew.—Cut 2 pounds of fresh mutton into small pieces; put them into a stew-pan with 3 quarts of cold water and a tablespoon of salt; set it upon the fire, and cook very slowly, letting it simmer, and keeping it well skimmed. After it has simmered an hour, add a large carrot, 2 turnips, 2 large onions, all cut in pieces, and 2 small heads of cabbage. Let the whole simmer until tender, and serve it with the various ingredients.

Mutton and Tomatoes.—Cut cold roast mutton in thin slices, fat and lean together; put it on a hot platter, and pour over it 5 or 6 tomatoes, stewed, and seasoned with salt, pepper, a bay leaf, a little pulverized sage, and a bit of onion, if liked. If the mutton is lean, add a piece of butter the size of an egg to the tomatoes. There should not be much juice of the tomatoes, and the excess should be poured off before seasoning. Good for breakfast with baked potatoes and toast.

Boiled Sheep's Tongues.—Boil $\frac{1}{2}$ doz. tongues until tender, in water which is salted and contains the juice of $\frac{1}{2}$ a lemon. Sauce Tartare is excellent to serve with them.

Escaloped Lamb.—Chop coarsely, cold lamb, either baked or boiled, and put a layer in a pudding-dish with a sprinkle of salt and pepper, and little bits of butter, then a layer of bread crumbs, and thus fill the dish, having a layer of

crumbs on the top; fill the dish with hot water up to the top layer of crumbs, and bake until the crumbs are browned.

Lambs' Liver, Curried.—Cut it in convenient slices to serve, soak in salted water for 5 minutes, while an onion is frying in salt pork fat; take the liver from the water, dry in a cloth, then put it into a pan and fry brown on both sides. Have the fat hot, and fry quickly. When brown, add a little water or stock, dust with salt and a little curry powder, cover, and simmer 10 minutes.

Lamb, Grilled.—Take a cold shoulder of lamb, and score the meat deeply at $\frac{1}{2}$ inch distances; prepare a teaspoon of salt, 1 of white pepper, a saltspoon of cayenne, a trifle of onion juice, and the strained juice of a lemon; rub this into the meat at night. In the morning, put on a gridiron over a clear, coal fire, and thoroughly heat through; put on a hot platter and spread with softened butter. Send to the table with hot plates.

Kid.—This is cooked in many ways, like lamb, and is much like lamb after being cooked.

Sheep's Brains.—Remove the skin and blood vessels and put them in warm water for 2 hours; then put them in boiling water, containing a little salt and vinegar, and leave until firm; then take out and put in very cold water. Then drain, dry, brush with oil, and roll in crumbs, well seasoned with pepper and salt. Put slices of bacon on them, and bake in a well heated oven, basting frequently. When nicely browned, take up, put the slices of bacon on toast, and lay the brains on the bacon. Serve with tomato, Tartare, or some acid sauce.

MEAT ROLY POLY.

4 cups flour. 2 teaspoons baking-powder. 1 teacup milk. 1 teaspoon salt.

Do not use any shortening, but mix and roll out $\frac{1}{2}$ inch thick, and spread minced mutton, veal or chicken on it. Have the meat free from gristle, and season it with pepper and salt. Then roll the crust over and over, and put it on a buttered plate, and steam in the steamer $\frac{1}{2}$ hour. Serve for breakfast or lunch, giving a slice to each person, with gravy served with it.

PORK.

Pork, more than any other meat, requires to be chosen with the greatest care. If it is killed and the flesh eaten when in an unhealthy condition, those who eat it will probably pay dearly for their indulgence. Care should be taken that pork is thoroughly cooked, as it is most indigestible when under-dressed. Uncooked or under-cooked pork should on no account be eaten. Exposure to the temperature of boiling water effectually kills the trichina, but obviously every part of the meat, inside and out, must be fully heated to destroy *all* the trichina, and there is no safety without that.

To freshen salt pork or ham, after cutting in slices, soak it for a few hours, or over night, in milk and water, or in sour milk, which is quite as good; afterwards rinse it until the water is clear, before frying, and it will be as palatable as salt pork can be made.

Baked Ham.—Cover the ham with cold water (after having thoroughly cleaned it) and simmer gently just long enough to loosen the skin, so that it can be easily taken off—in 2 or 3 hours, if the ham is large. After skinning, place it in a dripping-pan in the oven, and pour over it a teacup of vinegar, and 1 of water; put a little mustard in the water, and baste the ham with this while baking slowly for an hour; then cover the ham all over thickly with sugar, in which is mixed a tablespoon of flour, and bake slowly another hour *without basting*. This gives a

nice, brown, glazed crust; when it has partly cooled, turn a flat dish on the pot, and put a weight on it, to get thoroughly cold. This latter process insures nice, smooth slices when cut. The juice of a lemon may be substituted for the vinegar, if preferred.

Ham Balls.—With $\frac{1}{2}$ cup of bread crumbs mix 2 well-beaten eggs and some finely-chopped ham; season with pepper and a very little salt; make into balls, and fry in hot fat.

Boiled Ham.—To boil a ham it must first be thoroughly washed and scraped in warm water, containing a little baking-soda; then rinse in cold water, put it over the fire, skin side upward in the kettle, with water enough to completely cover it; let it slowly simmer 3 or 4 hours, according to the size; if it cooks rapidly, it will break in pieces. When done, take it from the kettle and remove the skin while hot, leaving on all the fat; stick cloves all over the fat part, and put it into the oven, to brown a little. It should be entirely cold before it is cut. Both lean and fat should be served in carving, as many persons like the latter best. Mustard, spiced vinegar, catsup, or pickles, are used as condiments with this.

Broiled Ham.—Ham is better broiled than fried. Slice it thin, and broil the slices on a gridiron, and when done on both sides, place on a platter with a fried egg on each slice. It should be broiled over bright, hot coals, from 3 to 6 minutes.

Ham Patties.—Take 1 pint of cold boiled ham, finely chopped; mix it with an equal quantity of bread crumbs wet in milk to make a soft batter; put the batter in patty-pans, break a fresh egg over each pan, sprinkle the top of each dish thickly with cracker crumbs, and bake until brown on the top.

Roast Pig.—The pig should weigh twelve pounds at least, before dressing; the butcher should dress it, leaving on the head and feet, and clean thoroughly; the harslet should be sent with the pig. First cook the liver and heart by boiling about 20 minutes in a little salted water; then chop them finely. Cut a loaf of bread in slices and dip in cold water, chop, and add to the harslet; pour over it a teacup of melted butter, and 2 well-beaten eggs; season with pepper, salt, sage, and onions if liked. Mix all together, and fill the pig; then sew it together. Bend the front legs under at the knees, and the hind legs forward at the gambrel joint; put a stick in the mouth to keep it open, wind a cord around to keep the legs in place; put in the dripping-pan with a little water, and tin dishes on each side to keep it on the knees. Bake until done—2 to 3 hours. Baste frequently, using melted butter at first; do not let it burn. Put a small red apple or lemon in the mouth before sending to the table, and serve with baked sour apples.

Boiled Pigs' Feet.—The 2 front feet should be cleaned, scraped, and to keep them in shape wrap them tightly in muslin, and sew or tie it up; boil 6 or 7 hours moderately; then let them cool, take off the wrapping and they will be like jelly. They can then be split, rolled in crumbs, and broiled or fried. Some acid sauce should be served with them.

Spare-ribs and Chines.—These are usually too fat to cook in any other way than by baking or roasting in the oven; in this way much of the superfluous fat is drawn from them. Rub them well with a little fine salt, flour, pepper, and pulverized sage, if liked; put them on the rack in the dripping-pan, containing a pint of hot water; the oven must be hot, but not enough to scorch the meat; baste often. The meat should bake about 2 hours, or until it is well browned; then take it up, pour off the fat from the gravy, at one corner of the dripping-pan, and thicken the remainder with a tablespoon of flour or corn-starch; add a little

water to make about a pint of gravy. Serve with sour baked apples, onions, potatoes and mashed turnips. Shoulder chine of pork, and loin, is cooked in the same manner.

Pork requires long and thorough cooking, for the texture of the flesh is close; fresh spare-ribs particularly require it, to extract all the superfluous fat, and it should be roasted or baked until of a rich brown color.

CHINE OF PORK.—The chine of an animal is the back-bone with the meat attached, and *griskin* (a term obsolete in this country) is used in England to designate the back-bone of swine, and particularly that part lying between the shoulders of the animal. The chine of pork is more often divided into "fore-loin," that part lying between the shoulders; "spare-ribs," or that part containing the long ribs, and "hind-loin," or small part of the spine just above the hams. In England, the hind-loin is sometimes called a chine when the bone is uncut and the two sides of the loin are in one piece, corresponding to the "baron of beef," or "saddle of mutton." In England these are all roasted, but in this country (the land of Yankee-cooking-stoves) all divisions of the chine are cooked exactly like the middle pieces or spare-ribs.

Pork Cutlets.—Take the remains of cold baked pork and cut it in nice pieces of the right size to serve; put a little of the cold fat in a frying-pan and let it get hot; fry a sliced onion brown, then lay in the cutlets, and fry them a light brown in the fat with the onions; take them up, and make a gravy with a little corn-starch and cold water; season with salt and pepper, and when thickened, pour it over the cutlets and serve.

Pork and Eggs.—Cut 2 or 3 slices of salt pork in dice, and fry, often turning it over and over with a fork; then break 5 or 6 fresh eggs and put them in the pan with the pork; stir all together rapidly, and cook until the eggs are set.

Pork Rechauffé (*Re-heated*).—Cut finely, cold roast pork, put a layer of this in the bottom of a pan or pudding-dish and season to taste; then a layer of bread crumbs, another layer of cold pork, and thus fill the dish; have a layer of fine crumbs on the top, but before putting them on, pour into the dish enough broth or water to moisten the ingredients; then put crumbs on the top, and bake until brown on top. Cold baked or roasted pork is more often served cold, nicely sliced and sent to the table with hot baked, or mashed potatoes.

Pork Steaks.—Take slices of fresh pork that have the fat and lean well blended, put on a hot gridiron and broil it thoroughly over a clear coal fire, turning often, and lifting if the dropping fat blazes to scorch the meat; put it on a hot platter, sprinkle with salt, and send in with baked potatoes.

Fried Salt Pork.—This is a most excellent dish when properly prepared, for those who are blessed with a good digestion. The pork should be of the best quality, and "clear fat." Cut the slices nearly $\frac{1}{4}$ of an inch thick, take off the rind, put in a hot frying-pan, and fry until crisp. Place the pork around the edge of the platter, fry a few eggs for the center, and serve. Salt pork is sometimes dipped in flour or yellow cornmeal before frying, and is excellent. After taking up the pork, a nice milk gravy can be made by adding corn-starch or flour to milk; pour it into the hot fat from the pork, and stir until it is thickened and well blended. This gravy is good with new potatoes; also delicious with buck-wheat muffins.

Souse.—Clean the ears, feet and gristly part (not the fat) of the pig's head; let them soak 12 hours in brine, then take out, scrape clean, and soak again in fresh brine. Then wash, put them in cold water, and boil gently until the bones loosen from the meat. Then put the meat in jars (not earthenware, or the vinegar will act on it) and cover with boiling hot spiced vinegar.

Souse Pie.—Cut the toes from the pig's feet, and use the legs up to the ham. Soak and clean well; cut in pieces, and boil in water to cover, with a little salt, until tender. Add a little boiling water from time to time as it evaporates, and

turn the meat from the bottom of the kettle with a skimmer to prevent burning. Take out the meat when done, and remove the bones; put the meat in a pan, or large pudding-dish, adding a little more salt if necessary; thicken the broth with corn-starch and pour over the meat; cover it with baking-powder biscuit-dough, and bake until the dough is well browned. Cheap and good.

Salt Pork Dinner.—Cut enough slices of salt pork to cover the bottom of the frying-pan; take off the rind; pour hot water over the pork and turn it off immediately; dip each slice in flour, and fry it brown on both sides; take it up on a platter and keep warm. Pour nearly all the fat into another frying-pan and fill it with sour apples already sliced, with the skins on. Sprinkle the apples with a little salt, and cover tightly with a deep, white pie-plate; stew until the apples are soft. In the meantime add a pint of sweet milk to the fat left in the first pan; let it simmer, then thicken with a little flour or corn-starch, and send it to the table in a bowl or gravy-boat. Serve with new potatoes and sweet-corn.

Pork Worst.—Cut a pig's head in pieces, and soak, with the liver and heart, over night in slightly salted water. The next morning wash and put it over the fire to cook slowly, in just water enough to cover it. When the bones will separate, take them all out, and cut the meat in very small pieces; return to the kettle, add salt, pepper, and any sweet herbs liked; then thicken it to the consistency of mush, with flour; fill square baking-pans with it, and let it get cold; then slice, dip in flour, and fry in salt pork fat.

Head-Cheese (*English Brawn*).—The cheeks of pigs' heads are reserved for salting with the hams and shoulders; the remainder is cut in pieces and soaked over night in salted water; the next morning wash thoroughly, and put over the fire in a kettle with just water enough to cover the meat (the cleansed pigs' feet may be added). Simmer slowly until the bones will easily separate from the meat, then take it up in a pan and pick out every bone; cut the meat in small pieces, season to taste with salt, pepper, and sifted sage; pour over the broth from the kettle, and put it in a cold pantry to harden. When thoroughly cold, remove the fat from the top of the pan, cut in slices, and serve with hot baked, or mashed potatoes.

Sausages, to Cook.—Sausage cakes are usually fried; when they are in skins, they should be pricked to prevent them from bursting, and they should be turned on all sides to insure thorough cooking. Sausages, especially those made of pork, should always be well cooked, and should never look red in the center when cut. They are best baked, as they are cooked slowly and are more thoroughly browned than when fried. Serve with baked potatoes, or mashed potatoes and other vegetables. The large Bologna sausages, made of beef mostly, require a long and thorough boiling for 3 or 4 hours; they are then dried and smoked. They are usually prepared and cooked by the butcher, and are eaten cold. The best thing to serve with pork sausages is apple-sauce. They garnish a roast turkey nicely.

POULTRY.

In selecting poultry, choose those which are plump, but not too fat. If they are young, they should be firm to the touch. If the bone across the breast above the hollow skin is hard to the touch, the bird is old; in young ones it is more like gristle. White-legged birds are given the preference by some, because they look better on the table, but black are equally good eating. Dark-fleshed game can

be eaten rare, but the white-fleshed should always be well done. In preparing poultry great care is required not to break the gall-bladder, for if it is broken, the gall will leave a bitter taste on every place it touches, which cannot be washed off.

Young poultry has not an excess of fat unless it has been "crammed" for that purpose, in which case it should be avoided, as that process affects the health of the fowls. Poultry and all meats should be cooked immediately if the least sign of taint appears; give it first a thorough washing in soda water, then a rinsing in clear water to which a little vinegar has been added; then either bake or roast it, as that mode of cooking drives away bad odors from meat better than any other. See our article on Marketing and Keeping Provisions for further hints about purchasing poultry, etc.

It is better to leave onions out of all meat dressings, unless you are sure they are liked by all at the table. A rich onion sauce can be sent in with them, or boiled onions served as one vegetable, for those who like them.

If a roast fowl cannot be served as soon as it is done, put it over a kettle of boiling water and put a dripping-pan over it, which will keep it from drying up.

If old fowls are washed in warm soda water, the strong smell will be overcome.

The garnishes for fowls are parsley, water-cress, horseradish, slices of lemon, slices of ham, fried oysters or sausages, and forcemeat-balls.

To Draw a Fowl.—Place the fowl on its back, and make a slit lengthwise in the skin of the neck from the body to the head; free the neck from the skin, and cut off the neck as close to the body as possible; then cut the skin, leaving a flap at least 3 inches long hanging to the breast. Loosen the crop and the windpipe, and insert the first finger, keeping it close to the inside surface of the body; work it round, breaking all the ligaments with which it comes in contact, thus loosening the contents of the carcass. Be careful not to thrust the finger into the center, for if the gall-bladder is broken, the gall will impart a bitter taste to whatever it may touch. Turn the bird, slightly enlarge the opening at the vent, insert the finger, and loosen the insides from the carcass at that end. Turn the bird again, and place it on its back; press the breast with the thumbs, and push out the gizzard by the hole at the vent; take hold of it and pull steadily, when the whole of the interior should be brought away entire. If all the insides are removed, little washing will be needed. Wipe it out with a damp cloth, or rinse quickly and wipe dry. If the breast bone protrudes too much, put a cloth over it and beat it down flat, putting something like a pestle inside to pound on.

To Truss a Fowl.—After stuffing the fowl, sew the skin of the neck over the back. Then run a long skewer through the pinion and then through the body and out through the other pinion, pressing them close to the body. Also press a skewer through the thigh and body and out through the other thigh. Pass a string over the projecting ends of the skewers, and tie it firmly at the back, to keep the bird firmly trussed. The legs can be crossed over the tail and firmly tied. The wings and thighs can be tied in place by winding a string around the body, if you have no skewers; cut the string off carefully when done, so as not to tear the flesh.

Boned Poultry.—Cut through the skin down the center of the back, and raise the flesh carefully on either side, with the point of a sharp knife, until the sockets of the wings and thighs are reached. Until a little practice has been gained, it will perhaps be best to bone their joints before proceeding further; but after they are once detached from it, the whole of the body may be easily separated from the flesh, and taken out entire; only the neck, bones, and the merry-thought will then remain to be removed. The fowl thus prepared may either (1) be restored to its original form by filling the legs and wings with stuffing; the body of the bird, also, should be filled with stuffing, and then the skin on the back should be sewn together, and the fowl trussed as usual. Or (2) the legs and wings may be drawn into the body, and the remaining space be filled with the dressing.

Plain Dressing.—Take slices of stale bread (do not remove the crusts) dip it in cold water, and chop in the tray; season with salt and pepper, and for $\frac{1}{2}$ loaf of bread soften a teacup of butter and stir into the bread; add a beaten raw egg and stir that in well. Fill the cavity in the fish or meat, but do not crowd it in; sew up, or wind the meat with a string, and when done, this will be light and crumbly—not pasty, as when made with hot water, nor hard, as when stuffed into the fish or fowl. This is excellent for fish, poultry, game, etc.

Poultry Stuffing.—Take a loaf of light bread, chop fine; add a little melted

butter, or cream, and 2 eggs. Some savory summer celery leaves improve it often, with warm water and milk.

Various Stuffings.—For fowls, a variety may be had by adding to the plain dressing, dates, stoned raisins, chopped celery, etc. A little ingenuity will devise many varieties.

Oyster Stuffing.—Take a small loaf of baker's bread, remove the crust, and crumb the bread very fine; pour on hot water enough to moisten it, and cover it tight. Chop 1 large onion and a qt. of oysters, take $\frac{1}{2}$ cup of melted butter, 1 teaspoon of powdered sage, and salt to taste. Mix all together, and if the oyster liquor does not make it moist enough, add a little more hot water.

Chestnut Stuffing.—Blanch, boil, and mash, 12 large chestnuts. Cook the liver of the fowl, mince it fine, and add the yolks of 2 eggs, 1 teaspoon each of salt and minced onion, 1 tablespoon chopped ham, 2 tablespoons grated bread, a little lemon juice and white pepper; mix all with the mashed chestnuts, and use for stuffing.

Boiled Chicken.—Pluck, singe, wash, and bone them, fill with any dressing liked; do not crowd in the dressing; sew up, and boil gently for an hour or more. To prevent the skin from breaking, roll each one up in a separate cloth. For salads, and cold sliced chicken, they may be boiled in a kettle with the water slightly salted, and without the dressing. Boil until the meat will start from the bones, and let them get entirely cold before cutting for salads; then they can be skinned and all the meat served in a much nicer manner than when the bones are taken out before cooling.

Chicken Fricassee.—Take 2 young chickens, cut them up, put them in a stew-pan, merely cover with cold water, cover the pan, and stew until tender; then season with salt and pepper, and 2 tablespoons of butter. A little celery can be added if liked. Add 2 tablespoons of flour, wet with a little milk or water, and the well beaten yolks of 2 eggs, which are mixed with a little of the cooled gravy, before being added; bring all to a boil, and then put the chicken on a warm plate, and pour on part of the gravy, sending the balance to the table in a boat. If old fowls are used, they will need longer stewing than chicken—3 or 4 hours being none too much.

Southern Fricassee.—Cut up chicken as for a fricassee. Dry each piece and dip in beaten egg and roll in cracker dust; season with pepper and salt, and fry each piece very brown in half butter and half lard. When well browned, add 1 cup of hot water, cover and simmer $\frac{1}{2}$ hour. Then take out chicken and put on plate in warming oven. Have ready a bowl of rice—cooked; put it into frying-pan which the chicken liquid has simmered in, add 2 tomatoes, chopped fine, a Chili pepper, also chopped fine. Toss all together lightly with a fork. Pile high in the center of platter and lay around it the pieces of fried chicken; garnish with stoned olives.

Chicken Cheese.—Take 2 chickens, boiled tender, chopped not too fine, and seasoned with salt and pepper. Boil hard 3 or 4 eggs, and slice, with which line molds and pour in the chickens, adding the liquor in which they were boiled. When perfectly cold, slice for luncheon, or Sunday tea, or for sandwiches.

Escaloped Chicken.—Cut cold boiled potatoes into irregular pieces; remove all the meat from a cooked chicken and cut it into small pieces; make a sauce of 1 pint of milk and 1 beaten egg, seasoned with a little salt and pepper; put a layer of the meat in a pudding-dish, then a layer of potatoes, and sauce to cover them; another layer of meat and potatoes, and cover the whole with cracker crumbs, moistened with melted butter; bake $\frac{1}{2}$ an hour.

Chicken Loaf.—Boil 2 chickens in as little water as possible to cook them

without burning, until the meat will drop from the bones. Remove the meat from the bones and cut it fine without chopping. Put it back in the kettle, with plenty of butter, pepper and salt; heat it thoroughly. Slice a hard-boiled egg in the bottom of a dish, pour the chicken over it hot, place a weight upon it and set in a cool place. When cool, it will come out in a form.

Chicken and Oysters.—Take a nice, tender chicken, and split it down the back, and after cleaning it well, pound all the bones flat; wash and wipe it dry; season with pepper and salt, and fry in sweet lard until tender and brown on both sides; put it on a platter and keep it warm. Make a gravy in the pan (after pouring out the fat) with $\frac{1}{2}$ pint of water, a piece of butter, and flour for thickening, or of $\frac{1}{2}$ pint of cream without the butter, if preferred. Have ready, about 25 large oysters washed clean in salt and water, then dried in a towel, and add them to the gravy when it comes to boiling; plump them in the hot gravy, and pour on the dish of chicken. Serve hot.

Chicken Patties.—Take 1 pint of cream, 1 tablespoon of corn-starch, 1 pint of cooked chicken, chopped coarsely. Let half the cream come to a boil in a stew-pan. Mix the remainder of the cream with the corn-starch, and add as soon as it boils; when this thickens, take off the fire, add the chopped chicken, and season to taste with salt, white pepper, and any other seasoning liked. Line patty-pans, small saucers, or sauce-plates, with rich pie-crust, and bake. When all is cold, place a heaping spoonful of the chicken on each crust and serve.

Chicken Pie.—Cut the chicken in small pieces as for frying, and stew in just water sufficient to cover it, with a little salt, until the meat begins to separate from the bones; take it out, pick out the bones, and put the meat in a tin pan or large pudding-dish; season the gravy with a little more salt, if needed, and a little white pepper, then thicken with a little corn-starch; add a lump of butter if the chicken is lean, and pour the gravy over the chicken. Make a rich baking-powder biscuit-dough, spread it with the hands until it is large enough to cover the pie, place it on the meat, and cut a large cross in the middle of the crust; bake until the crust is a rich, golden brown, but do not have the oven hot enough to scorch it.

Dangerous Gases in Meat Pies.—If the pie is cut and eaten hot, there will be no danger of its being poisonous—if set away to cool, be sure that there is an opening in the center of the crust *down to the meat*, for the escape of the steam and gases while cooling. The rising of the crust while baking, sometimes closes the opening in it, and the slow cooling, and confined gases, cause it to be unwholesome. This should be especially guarded against with *all* meat pies. Meat pies are those made entirely of meat and crust, while *mince pies* are made of minced meat, apples, fruit and spices.

Meat Pie.—Take cold turkey, chicken, or any cold meat chopped fine; season with salt, pepper and gravy; lay pie-crust around the edge of a platter, and cover the same; bake a nice brown in the oven.

Pressed Chicken.—Boil 2 or 3 chickens and use what is wanted for dinner—then take what is left and boil until it will drop from the bones easily. Remove bones, and let the liquor boil down if there is too much; then add the meat, and season with pepper and a little cinnamon. Put in a square tin to press. It is easily made, and is very nice for Sunday lunch.

Chicken and Rice.—Take fricasseed chicken and remove the bones from the largest pieces, leaving the others in. Cover the bottom of a small pudding-dish with cold boiled rice, then put in a layer of the chicken, sprinkled with salt and pepper; then more rice, and so on until the dish is full. Have the last layer rice.

Put in the gravy that is left, and cover the whole with the yolk of an egg well beaten. Set in the oven and bake until it is light brown.

Chicken Shortcake.—Cut the meat from the largest pieces of cold stewed chicken and remove the bones (the wishbone and other small pieces may be left whole); heat, adding more gravy, if necessary, and when hot pour on a shortcake, cut in pieces, made as follows: *Shortcake.*—Mix 2 teaspoons of baking powder with 2 cups of flour. Rub into it a small $\frac{1}{2}$ cup of butter, and then add 1 cup of sweet milk. Bake in a quick oven in a thin sheet.

Chicken Supreme.—First skin, then carefully cut the breast meat from 2 full grown chickens; divide each side of the breast meat into 2 long fillets—this will give 8 pieces, and is sufficient for a party of that number; flatten them by rolling with the rolling-pin until they are about an inch thick, then broil over a clear coal fire until they are thoroughly done and well browned; sprinkle with salt and white pepper, place on a hot platter, and spread with butter. Garnish with parsley, and serve with currant jelly, or any meat sauce preferred. These fillets can be stewed tender in a little water, and served with Bechamel sauce. The remainder of the fowls can be used for a stew, chicken pie, or chicken fricassee.

Chicken Tarts.—Mince cold chicken very fine, and season with pepper and salt to taste. Boil 1 cup of milk with $\frac{1}{2}$ an onion and a blade of mace in it; when it is scalding hot, take out the onion and mace, and stir in a thickening made of 1 teaspoon of flour wet with cold milk. When it has boiled a few minutes, mix in 2 cups of chopped chicken. Have ready some rather large tarts made of puff paste, and put a spoonful of the mince in each.

Chicken and Tomatoes.—Prepare chicken as for a fricassee, with a few slices of salt pork and a small onion, sliced; cover them with water and let them simmer slowly; when nearly cooked, add 4 medium-sized tomatoes, peeled and sliced, and a little salt and pepper, and cook $\frac{1}{2}$ hour longer. Arrange the chicken on a platter with some toasted crackers, and pour the broth over the whole and serve.

Fried Fowl.—Cold roast or boiled fowl can be dipped in batter and fried. Make the batter of 4 heaping tablespoons of flour, 1 egg, $\frac{1}{2}$ cup of water, and 2 tablespoons of salad oil. Add the water to the flour gradually, stirring it smooth; then beat in the yolk of the egg, with $\frac{1}{2}$ teaspoon of salt, and just before you want your batter, stir in the beaten white; some flour may require a little more water. Dip each piece of chicken in the batter, and fry a light brown.

Giblets.—These are the liver, heart and gizzard of fowls, with the feet, and long, bony part of the legs, and the tips of the wings. Carefully cut away the gall sack from the liver, peel the hard lining from the inside of the gizzard, and remove the veins, arteries and enveloping membranes from the heart; throw them in cold water and wash well. Boil them $\frac{3}{4}$ hour in slightly salted water sufficient to cover them. Take them up, cut in small pieces, or chop, thicken and season the gravy and return the giblets to reheat; then serve as giblets stewed. Or they may be baked in 2 crusts as "giblet pie." Giblets are also chopped, added to the gravies, and served with the fowls they were taken from. Scald and scrape the legs and feet for the soup-kettle—they are rich in gelatine.

To Make Old Fowls Tender.—Take an old fowl and stew it from 2 to 4 hours according to our directions for stewing; then roast it in the oven, basting frequently. It will make an old fowl 5 or 6 years old, tender and equal to a chicken. Try it.

Fowls Rechauffé (*Reheated*).—Cut up a cold fowl, taking off the legs and wings, and dividing the fowl in pieces; season bread crumbs with pepper and salt, and minced parsley; mix all together and lay over the pieces of fowl in a dripping-pan, and brown them in the oven. While that is taking place, make a gravy of butter and flour in $\frac{1}{2}$ pint of water or broth; add a tablespoon of catsup and let it come to the boiling point; place the warmed fowl in a dish to serve, pour over it the hot gravy, and send to the table immediately. Good for breakfast.

Minced Fowl.—Cut the meat from the bones, and put them on to boil with the bits of skin which are left, and an onion, in enough water to cover them. When they have boiled until you have a cup of strong stock, strain and pour in a cup of hot milk, with pepper and salt; then stir in 2 cups of minced fowl, and serve with chopped parsley sprinkled over it.

Steamed Fowl.—Place a fowl in a close steamer and cook 1 hour. Then remove from the steamer, rub well with salt, and stuff as for baking; steam again until perfectly tender, then place it in a baking-pan, rub with flour and butter and place in the oven until brown, basting often with butter. Use some of the liquor in the steamer for gravy by adding it to the butter in the dripping-pan; thicken the gravy with flour, and add the chopped giblets and a little celery salt.

Guinea Fowls.—They are better when a year old and under, for the old fowls are apt to be tough and dry. Guinea fowls are cooked in various ways in the same manner as the common domestic fowls.

Roast Duck.—Choose ducks that are plump, and have yellowish feet; dress like other poultry, taking care to get off all the down. Fill the body with seasoned dressing, sew up, and bake or roast, basting often. They are often par-boiled before being baked, as that lessens the strong taste. They can also be stuffed with apples which absorb the strong taste and should not be eaten on that account. Celery should be served with roast duck, and any of the piquant meat sauces liked best.

Wild ducks are cooked in the same way as the domestic variety, but if the bones are solid and show indications of age, they are better stewed, or boiled and made into side dishes.

Geese.—Geese are called green until they are 4 or 5 months old. They are dressed, singed, trussed, and roasted in the same way as chicken, carefully basting them while baking or roasting. Cook until they are thoroughly browned on both sides, and the English sauce for them is made of gooseberries, as their name indicates. The remains of baked green goose is made into entrées, side dishes, hashes, etc., in the same way that other cold poultry is re-warmed.

Roast Goose.—It is better to keep the goose a few days after coming from the market, but do not let it come to the slightest taint. Pluck, singe, draw, and wash thoroughly; then fill the cavity with a dressing made with sage and onions, if liked, or a plain bread and butter filling may be used. Sew up, and bake or roast in a moderate oven until a golden brown on both sides. Baste often; use butter and flour when nearly done. The goose is sometimes par-boiled before baking. The oil which runs out will be too strong for gravy. Serve apple sauce with the goose.

Goose Stuffing (*Soyer's*).—Take 4 apples, peeled and cored, 4 onions, a little sage and thyme; stew until soft, then pulp through a sieve; add a sufficient amount of mashed potato to fill the bird. The stuffing should be well seasoned with salt and pepper.

Boiled Turkey.—Draw and clean the turkey, then bone and nearly fill the inside with veal force-meat; thrust a trimmed boiled tongue down the middle of the force-meat, and sew up the turkey securely; truss and put it as near as possible in the original shape. Sew it up in a buttered cloth, and boil very gently to prevent it from bursting. To carve, cut *across* the breast, so as to give each person a slice composed of equal parts of tongue, turkey and force-meat. Turkeys dressed in this fashion, covered with Bechamel sauce, and garnished with aspic jelly, form an elegant dish for ball suppers.

Boned Turkey, Boiled.—Chop finely about a pound of veal, and $\frac{1}{2}$ pound of salt pork; roll 3 crackers, add 2 eggs well beaten, with a little chopped parsley; salt and pepper to taste; mix, and fill the turkey, not crowding it. Sew it up and roll in a cloth; boil from 3 to 4 hours, then press by putting it on a platter, turn another platter over it, and place a weight on the upper platter, until cold. Take a quart of the broth in which the turkey was boiled, add an ounce of gelatine which has been soaked in a little cold water, and the juice of a lemon; place it in a dish about an inch deep; when solid, cut $\frac{1}{2}$ of it in inch squares to lay over the top of the turkey; beat the other half with a fork and place around the turkey. Sausage meat of fresh pork, highly seasoned, may be used for filling, instead of the veal and salt pork.

Roast Turkey.—After drawing the turkey, stuff it with bread, oysters, or any other stuffing desired; then sew it up, truss, and rub with butter, and sprinkle on pepper, salt and flour. Put it in to roast, having the oven hot at first; then reduce the heat and put 2 cups of water in the dripping-pan. Baste frequently, and each time dredge on salt and flour. It should be cooked thoroughly, roasting about 20 minutes to the pound, and 20 minutes extra. Cranberry sauce and currant jelly are the best things to serve with roast turkey.

Giblet gravy can be made for turkey by boiling the giblets till very tender (begin to boil them early); then chop fine, and add salt, pepper, and sufficient flour to thicken. When the turkey is removed from the pan, pour on the giblets sufficient gravy from the pan, and boil it. Make an ordinary gravy with the balance left in the pan, as some do not like giblet gravy.

Turkey Cheese.—This is an excellent way to cook an old turkey too tough for roasting. Have it dressed in the usual way, and let it hang in the larder for a few days if the weather is cold. Singe, wash, and cut it in small pieces as for a fricassee of chicken; put it in the dinner-pot with just cold water enough to cover it, put on the fire, and let it come to boiling; then add a tablespoon of salt and set the kettle on the back of the range, where it will gently simmer until the meat will separate from the bones. At this stage, remove the kettle from the fire, take out the turkey into a pan or deep earthen dish, remove all the bones, cut the larger pieces of meat into smaller portions, season with more salt, if needed, add pepper and herbs, if liked; then pour the liquor from the kettle over it, and let it get cold before using it.

Turkey Ragout.—Cut all the meat left from roast turkey, in as large pieces as it will allow. Break up the bones, put them in a stew-pan, with cold water to cover them, boil an hour, strain out the bones; season the liquid with pepper, salt, a little chopped celery or celery salt; stir in a thickening made of a spoonful of flour rubbed smooth in a little cold milk, $\frac{1}{2}$ a cup of milk, and butter the size of an egg. Stir over the fire constantly until thick as cream, put in the cold turkey, simmer 5 minutes and serve.

A Good Breakfast Dish.—A fine breakfast dish can be made by frying the livers of chickens or turkeys with a few thin slices of bacon. Cut the liver and bacon very thin; season with pepper and salt.

GAME.

Game is young if the bones of the legs and wings break easily, and if the skin is tender.

All water birds should be eaten as fresh as possible, as their flesh is oily, and soon becomes rank. If there is a large quantity of game on hand at one time, it will be well to cook the young game first, and the old, 1 or 2 days later, as old birds will keep longer than young ones. Old birds also need longer cooking. Young game cooks rather more quickly than poultry, and the flavor is best retained by cooking it plainly. The rule is, that while dark-meated game may be rare, white-meated game should be well done.

Game, like all meat, should not be washed, unless it is really needed, and should never be left in the water, because, as we have elsewhere explained, the water will draw out the juices. Game drawn with care only needs wiping. It is best to dry-pick birds, using care, and taking off all the feathers which can be readily removed; then plunge into boiling water, skin, draw, and finally wipe carefully. Wild ducks, and geese, however, are so oily that they should be washed with warm water and soap, as anything less effectual will not cleanse them properly. The objectionable flavor of wild ducks comes from the oil in the skin; if it is very strong, they can be skinned; then spread with butter, dredge thickly with flour, and put in a very quick oven to roast.

The directions for "drawing" and "trussing" given for poultry, will apply equally well for wild fowls.

It is sometimes desired to overcome the wild flavor in the larger birds, as it is disliked by some people. There are various ways to do this: (1) Take a lemon, take off the peel, and lay it inside; renew it every 10 or 12 hours, and continue for 1 or 2 days. From most game this will absorb the unpleasant flavors. (Probably the best plan.) (2) Ducks, geese, prairie chickens, pheasants, etc., may lie for 10 or 12 hours in salt and water. (3) They may be put in soda and water for 2 or 3 hours. (4) Parboil in water containing 1 or 2 onions.

Most game is kept as long as it can be without becoming tainted, as it is thought the flavor is thereby developed. If it does become slightly tainted, it should at once be picked clean and put into milk for a full day (24 hours) keeping it entirely covered; this will sweeten it, and it should be cooked at once.

Game is less fat than butcher's meat, and is generally considered very nourishing; it is easy of digestion and is valued in the sick room. This does not apply to wild fowl, however, which have close, firm, and rather oily flesh, and are, therefore, unsuited to weak stomachs.

The garnishes for the larger game, like wild ducks, etc., are parsley, slices of orange or lemon, cranberry or apple sauce; while for small game, the most common are parsley, toast, currant jelly, and slices of lemon. Currant, grape, or any acid jelly, is suitable to serve with game.

Cranes, Plovers, Snipes, Herons, Prairie Chickens, Quails, Pigeons, Wood-cocks, and all small game, are cooked in much the same way as spring or broiler chicken—that is, if the game is young, which will be known by the tenderness of the bones, and the freshness of the feet. They can be broiled, fricasseed, stewed, etc., in the same manner as poultry. *Old game* should be parboiled before roasting, as that is the better way of cooking old game or poultry.

Black-bird Pie.—Take 1 doz. black-birds, reed-birds or other small game; skin and draw them, cutting off the heads and feet. Put a bit of bread, buttered, peppered, and salted, into the body of each bird; place them in a pudding-dish with thin slices of cold, *boiled*, fat salt pork; add a little cold water, cover them with a rich pie crust $\frac{1}{2}$ inch thick, and bake thoroughly in a moderate oven.

Wild Duck.—Pick the ducks carefully, and thoroughly singe off the down,

then rub them with a coarse cloth. Split them open down the back, wash clean, and dry them with a cloth; pound flat with the potato-masher, or rolling-pin, and broil; turn often on the fire, which must be clear and bright. Have a little wisp, made of a bit of linen, tied on a clean stick, and rub them with melted butter every time you turn them. Serve hot. *Canvas-back ducks* should be served on hot plates, and eaten as soon as possible after being taken from the fire. Serve with celery mayonnaise.

Grouse.—Cook same as "Prairie Chicken." Or the breast and legs can be larded; then rub with butter, sprinkle on pepper and salt, dredge with flour, and roast in the oven. A bread sauce is best served with it.

Partridges.—*Boned.*—Bone the birds, and lard with thin slices of salt pork; stuff with oysters, roll up and tie; place in a dripping-pan with a little hot water and butter, bake in a moderately hot oven until well browned, basting often. Serve with mushroom sauce and mashed potatoes, and garnish with slices of lemon and parsley.

Roast Partridges.—Pick, draw, and wipe clean; then fill with turkey dressing; truss them in shape and put in the dripping-pan with a little water; lay on the birds, thin slices of fat salt pork. Roast about an hour, basting often; when done, thicken the water in the pan, add more seasoning if needed, place the partridges on a hot platter, and pour the gravy around them, or send it to the table in the gravy boat, with a garnish of parsley around the birds on the platter.

Pigeons.—*Roast.*—These to be good should be cooked soon after being killed, and should be dressed and drawn immediately. Wash them thoroughly and wipe them dry; spread a lump of butter on a bit of bread and place it in the cavity of each bird; truss them into shape, cover the bottom of the baking-pan with very thin slices of salt pork, place the pigeons in the pan with the backs down, and put a little water in the pan; roast in a hot oven until they are done, and of a nice brown color; they should be basted often. Garnish the pigeons with the bits of pork, slices of lemon and parsley. Make a gravy in the pan, and send it to the table in a gravy boat, with the pigeons. The juice of a lemon dripped over the birds after they are on the platter adds to their delicacy.

Pigeon Pie.—Line a pie dish with thin slices of fat bacon, place on this the pigeons cut in quarters, 3 pigeons to a pie. Fill the interstices with veal taken from the loin or leg (of course uncooked); season with pepper and salt, and proceed as to the crust in the same way as for other meat pies.

Squabs (young pigeons).—Dress in the same manner as for "broiler" chicken; split down the back, pound flat with the rolling-pin, butter the broiling-iron, and cook over clear coals until a delicate brown, turning often. Sprinkle with a little salt and pepper when done, and spread with butter, and keep hot on the top shelf of the oven until ready to set on the table.

Plover.—*Fricassee.*—Dress, wash, clean, and put to stew in just water to cover them; boil slowly for an hour, then add a little salt, and boil the water out rapidly, to brown the birds in the kettle; watch that they do not burn. Take out, put bits of butter on the birds and keep hot. Make a brown gravy in the kettle, pour over the birds, and send to the table.

Fried Plover.—Skin the birds, reserving only the breast and legs—the remainder can go into the soup-kettle—wash and wipe them dry; roll in flour or bread crumbs, put in a hot, well buttered frying-pan, and fry until nicely browned

on both sides; place on a hot platter, spread with butter, and sprinkle with a little salt and pepper, and keep the platter hot while making a gravy. Add more butter for the gravy, to that in the pan, and $\frac{1}{2}$ pint of hot water. Mix a little cold water with a tablespoon of corn-starch, stir rapidly until it thickens, season with salt and pepper, and pour it over the birds. Serve with wild grape jelly, or some nice meat sauce.

Prairie Chicken.—Cut out the breasts, cut each one in two, rub with butter, broil, season with salt and pepper, and serve on buttered toast; garnish with currant jelly. If for breakfast, serve on fried mush. The balance, except the breast, is apt to be tough, and is best if first parboiled; then rub with butter and broil as above. They are often split open at the back, rubbed with butter and broiled, but we think the above the best way.

Quail.—*Broiled.*—Pick, draw, and split down the back, then wash and wipe dry; pound flat with the rolling-pin, or a flat-iron covered with a cloth; broil slowly, and baste often with butter. Serve on toasted slices of bread, richly buttered.

Quail Pie.—Take 8 or 10 quails, cut each in two, and lay in salt water for 2 hours; then put them in a sauce-pan with 1 large onion, 2 chili peppers, some parsley, cut fine, salt and black pepper; cover with water, and stew until tender; then add $\frac{1}{2}$ lb. butter, 2 tablespoons flour, and simmer a few minutes; season with a little lemon juice and mushroom catsup. Place in a pan, cover with puff paste, and bake.

Small Birds.—A method of treating small birds which is liked by many, is to halve sweet potatoes lengthwise, scoop out a depression large enough to receive half a bird, or if very small, a whole one. Put in the dressed bird, season with pepper, salt and butter, put on the other half of the potato, tie it, and bake till soft. Serve in the potatoes; garnish with a sprig of green leaf. Reed-birds, etc., are nice this way. Small birds can also be fried in hot fat, or roasted, broiled or stewed.

Snipe.—Treat the same as Woodcocks.

Woodcock.—Pick the birds, draw the trail, and wipe clean. Tie the legs, remove the skin from the head, turn the head under the wing and tie, also tying a thin slice of bacon on the breast. Fry in hot lard 2 or 3 minutes. Season, and serve on toast, with currant jelly. If preferred, it can be prepared the same way and roasted in the oven.

Salmis of Woodcock.—This is made of cold roast woodcock. Cut the birds into small neat pieces to serve, and keep the remainder—all the bones and trimmings—for the soup-kettle. Simmer until the meat comes off the bones, with herbs, a little salt and pepper. Add also any gravy left from the day before. Strain through a colander, and return to the kettle. Thicken with a little corn-starch and put in the pieces of woodcock to get hot in the soup. There should be about enough of the soup for a plenty of good gravy. Croutons, or strips of toasted bread can be laid around the edge of the platter, with sprigs of parsley or chives.

Rabbits.—Jack-rabbit is the term usually applied to the wild rabbit of the United States. They are plentiful in some parts of the country, and in the fall, when the boys bring them in from gunning excursions, they are fat and most delicious, cooked in various ways, either roasted, fried or boiled, and they make a fine soup or pot-pie. If the bones are strong and the skin tough, they are old,

and are better boiled whole and served with white or cream sauce. If young, the skin is tender and the ears tear easily, in which case they are nice cut in pieces, pounded flat and broiled over a clear fire in the same way as chickens are broiled. They can be roasted whole, if young, filled with a bread and butter dressing, with a large slice of fat salt pork spread over the rabbit, and it should be frequently basted. If large, it should be in the hot oven from $1\frac{1}{2}$ to 2 hours, and well browned, and served with a brown gravy made in the dripping-pan after the meat is put on the platter.

Squirrels.—The old ones may be known by their greater size, and by the greater strength of the bones. After dressing and cleaning, they are cut in quarters; those that are old are better stewed. Put them over the fire in a kettle, with water enough to cover them; stew gently until the meat starts from the bones, then season with salt, pepper, and herbs, if liked; add a little corn-starch for thickening, with a lump of butter. The young squirrels can be cut in quarters, and either broiled or fried, as you would chickens.

Squirrel Pie.—Clean, and soak $\frac{1}{2}$ hour in salt water; take out and stew with a little salt pork until half done. Line the sides of the dish with pastry, lay in the squirrel, put in the gravy, put on an upper crust, cut a cross in it to let out the steam and gases, and bake.

Buffalo and Bear.—Bear and buffalo meat is either baked, boiled, fried or broiled, in the same ways as beef.

Opossums and Raccoons.—Opossums, raccoons and woodchucks, are stewed or baked, and served after the manner of pigs' meat, and are considered a delicacy by hunters. Old animals can be parboiled before cooking—with young ones it is not necessary.

Venison.—Venison is easily digested. As the hairs often cling to the meat, it should be cleaned carefully before cooking. The best cuts for steaks or roasting come from the loin or saddle. The rules given for cooking beef or mutton apply equally to venison. Stew the tougher parts. Currant jelly is considered the best thing to serve with venison, or garnish with slices of lemon.

Venison Steaks.—Cut venison steaks in suitable pieces for serving; heat $\frac{1}{4}$ of a lb. of butter in your frying-pan; season the steak with salt and pepper, then dip them in wheat flour or rolled cracker crumbs, and fry them a nice brown on both sides alike. When done, set them in the oven with a tin over, to keep them warm, while you prepare gravy, as follows: Dredge a large tablespoon of flour into the butter in the pan, and stir until it is brown, without burning; put in a teacup of boiling water, with a teaspoon of currant jelly dissolved into it. Stir briskly for a few minutes, then strain the gravy over the meat and serve at once.

HASH AND CROQUETTES.

The dinner table should be liberally supplied with both meat and vegetables, as it is the principal meal of the day. This should be done so that each member of the family can be generously helped, remembering that a family stinted in food, no matter how finely dressed, or housed, can never be in a healthful condition; it also provides for unexpected guests. The remainder of the dinner, if at noon, can be sliced cold, and served with the supper if needed, or minced the next morning for hash. Hash is also a fine accompaniment on the supper table in cold weather, when hungry children come from school. The meat for dinner need not be of the most expensive joints, for the cheaper cuts are quite as nutritious, and, if properly cooked, can be made very palatable.

HASH AND MINCED MEATS.

Under this head are included recipes for mincing and re-warming in an appetizing manner, cold meat of all kinds, fish, etc., etc. This minced meat is usually combined with vegetables, or bread, either in crumbs, or toasted slices, and forms a series of dishes, both economical and agreeable to the palate. The French term *Salmis* (*Salmy* by foreign cooks) is used more particularly to designate minced game re-warmed in various ways, but in plain English it is simply *hash*. In making hash, and in re-warming any kind of cold meat, do not confound the term re-warming with re-cooking; to re-cook meat is to harden it, and the secret of good hash is to make it just piping hot, and *no more*.

Hash.—One of the most common forms in which cold potatoes and meat left from yesterday's meal appears, is—hash. Not 1 person in 10 knows how to put it together appetizingly. Chop fine such bits of cold meat as you may have, add a double quantity of potato, chopped fine also, mix well, season with pepper and salt to taste; 8 minutes before you wish to serve the dish, melt a tablespoon of butter in a spider, and, when *hissing hot*, put in the hash and press it down well and evenly all around. At the end of the time specified, have a heated plate ready, turn it over the spider, tip the latter upside down with the plate beneath, and send your steaming "hash cake" to the table. This "hash" can be varied indefinitely. Some prefer a larger portion of meat, others not so much. Occasionally a flavoring of chopped onion may be added, or a spoonful of any good catsup or sauce to give piquancy. And sometimes for a change, mix as directed, flour your hands well and form into balls, and fry light brown in plenty of hot lard.

Do not stir hash while it is heating, for that inclines it to stick to the pan, and it also makes the hash salvey. The very best hash is made with hot baked potatoes, $\frac{2}{3}$ potato to $\frac{1}{3}$ of finely chopped meat.

Baked Hash.—Chop finely the remnants of cold meat left from dinner, chop cold potatoes and add—there should be twice as much potato as meat. If there are not enough of cold potatoes for this proportion, dip 2 slices of bread in cold milk or water, and chop; season with salt and pepper, and herbs, if liked, with a bit of sliced onion. Melt a piece of butter the size of an egg, in the baking-pan, put the hash well mixed in the pan and cover tightly with a plate; bake $\frac{1}{2}$ hour, and turn out in a cake on a hot dish. If it is covered with a white pie-plate, that is the best dish to serve it on, as it is already hot. Economical and good. Serve with pickles.

Corned-beef Hash.—If the family is large, in addition to the daily dinner, it is

well to boil a piece of corned-beef every 2 or 3 days and have this hash every day or every other day, either for supper or breakfast, as it is economical and liked by most people. Notwithstanding the threadbare jokes about "hash-mills," "hash-factories," "mysteries," etc., people still like a good dish of hash when they have "confidence in the cook." Cook the beef slowly until done; let it get cold in the liquor it was boiled in, then take it out, wipe it dry, and it is ready to chop. Use the fat and lean together, and the cold fat from the top of the kettle to heat with the hash. Have the potatoes quite cold, or they will stick to the chopping knife. A lady with a large family of fashionable boarders, told the writer that this dish was often *called for* at her table.

French Hash.—Take cold bits of meat left from a roast of beef, chicken or cold turkey, finely minced, add gravy enough to make moist; when quite hot, place the mixture over toast. This is a very nice breakfast dish.

Ham Hash.—Take equal parts of potato, boiled ham and bread, chopped fine, and cooked in hot fat left from frying ham; cook about 10 minutes, and season with pepper when it is ready to be dished.

Scotch Hash.—Chop raw beef very fine; add butter about the size of an egg, pepper, salt, and chopped parsley; cover with water, stew 15 minutes, keeping it covered. Pour it over slices of toasted bread.

Turkey Hash.—Mince the remnants of turkey left from a previous dinner. Boil the bones in a quart of water until the quart is reduced to a pint; then strain, add turkey gravy if you have it, a bit of butter if the turkey is not fat, with a seasoning of salt and pepper; if there is dressing left, boil it in with the bones. Dredge a little flour over the minced turkey, put it in the hot gravy and let it just come to boiling heat. Serve in a hot dish on slices of toasted bread.

Veal Hash.—Chop $\frac{1}{2}$ pint of fricasseed veal (do not make it as fine as for croquettes); put veal fat, beef dripping or butter, in the stew-pan with the meat; if you have no broth or gravy, add hot water enough to wet the meat. Season with pepper and salt, dredge on a little flour, stir all together, put in a hot dish, with slices of toasted bread or crackers in the bottom, and send to the table with baked potatoes.

Vegetable Hash.—Take equal parts of boiled vegetables, corned-beef, and salt pork, chopped together; this makes a fine hash. When you have a boiled dinner, always have enough left to make hash for breakfast the next morning. The vegetables used, are potatoes, turnips, cabbage, beets, and parsnips or carrots; put the fat from the kettle in which the dinner was boiled, in a large frying-pan, and let it melt; then put in the hash, smooth it down, put a pie-plate over it to keep in the steam, set it on the back of the stove for 15 or 20 minutes until thoroughly heated, and dish it in the hot plate which covered it. Vegetable hash is often made without meat, and is much liked by most people.

Hash Pie.—Take any kind of cold meat and chop it finely; season with salt and pepper, put a layer of bread crumbs, then a layer of meat, then crumbs, until the dish is full. Make a gravy, pour it over, and bake.

Scrappe.—This can be made of odds and ends of fresh meat such as would be used for soups—pigs' heads and feet, beef shanks and beef trimmings. Boil the meat with sufficient water to cover it well, until the meat separates from the bones; then take it up, remove the bones, cut, or chop the meat finely, and return it to the broth; add salt, pepper, and herbs, if liked. Let it boil up again and thicken it with cornmeal to make a stiff mush, and cook it thoroughly. Put it

in bread-pans to solidify, and, when cold, cut off in slices and fry in salt pork fat, dripping, or sausage fat. This is an inexpensive dish, and excellent in cold weather, for supper or breakfast. Finely minced remnants of any kind of cold meats, with the gravy, can be utilized in the above manner, instead of the fresh meat.

PILAFF.

1 onion.
2 cups minced cold meat.

1 pint tomatoes.
Butter the size of an egg.

1 teacup rice.

Put the butter in a frying-pan, and cut the onion in, then fry to a delicate brown; add the rice, and brown that in the butter, taking care not to let it scorch. Next add the tomatoes and 1 pint of hot water; cover and cook until the rice is done, adding more water if needed, but it should not be watery when done. Season with salt, pepper and cayenne, and curry powder if liked; then put in the chopped meat, stir well, and send to the table hot.

CROQUETTES.

These are somewhat allied to hash, as they are only elaborate dishes made of finely cut meats, or with fish, oysters, vegetables, rice, etc., or of several of these ingredients combined. They are formed into rolls or ovals, and usually fried in smoking hot fat, after they are egged and bread-crumbed. Drain on paper, or a wire sieve, paper being best. The mixture may be stiffened by working in a little fine cracker dust, if too soft to roll well, but it is apt to be made too stiff if any uncooked material like flour is added.

Baked Croquettes.—Take 2 cups finely chopped veal, $\frac{1}{2}$ cup dry bread crumbs, 1 egg, well beaten, 1 teaspoon salt, $\frac{1}{2}$ teaspoon pepper, a pinch of mace; form into croquettes, roll in egg and cracker crumbs, and bake in a quick oven.

Brain Croquettes.—Put 2 oz. of butter or beef drippings into a sauce-pan and set on the stove; when the butter has melted, add 1 small onion chopped fine; let it brown, then add calf's brains cut in small pieces, a small slice of bread first soaked in cold water and squeezed dry, a little thyme, minced parsley, $\frac{1}{2}$ nutmeg grated, a little cayenne pepper and salt; heat these all well, then remove from the stove and add $\frac{1}{2}$ cup of milk and 1 egg, well beaten. Mix all thoroughly and set aside to cool. When cold, form into croquettes, dip them in beaten egg, roll in cracker crumbs and fry brown in hot fat.

Chicken Croquettes.—To 2 cups of cold boiled chicken, finely minced, add 1 cup of fine bread crumbs, 2 well beaten eggs, pepper and salt to taste; add a little cream if not moist enough—it should be as soft as can be, and keep its shape after being molded. Have ready on the fire a kettle of hot fat; flour the hands and make the croquettes into rolls a little larger than English walnuts; dip them in beaten eggs, then in fine bread crumbs; place in a wire basket and fry in the hot lard until a golden brown; drain on a wire sieve, then keep them hot until time to serve.

Chicken Croquettes, No. 2.—Take 1 cup finely chopped chicken, 1 cup finely sifted bread crumbs, 1 teaspoon salt, $\frac{1}{4}$ teaspoon white pepper, $\frac{1}{2}$ teaspoon chopped parsley, and $\frac{1}{2}$ cup stock, made by boiling the bones of the chicken; heat all together, and then stir in 1 beaten egg. When cold, form into croquettes, roll each in fine bread crumbs, then in beaten egg, then in crumbs again. Put them carefully into the frying-basket, and plunge it into smoking hot fat for 1 or 2 minutes.

Chicken and Oyster Croquettes.—Take 1 cup of cold chicken, chopped fine, 1 saucer of cold, escaloped oysters, also chopped, $\frac{1}{2}$ cup sifted bread crumbs, pepper, salt, a little mace, and 1 egg, beaten light; add a little broth made of the bones of the chicken boiled in just water enough to cover them. Have the mixture as soft as you can handle it, form into long rolls as large as a man's finger, roll in sifted bread crumbs, and fry in hot fat. Serve with slices of lemon.

Fish Croquettes.—Remnants of any cold fish, egg, bread crumbs, cayenne, salt, and fat for frying are needed for these. Flake the fish finely, season to taste, add an equal quantity of bread crumbs; make a stiff paste with beaten egg; form into round balls about an inch thick and 3 or 4 inches long, and fry them a golden brown in hot lard. Serve on a napkin, to absorb all the superfluous fat.

Hominy Croquettes.—Soak 1 cup hominy in water all night, and the next morning boil it till tender in 1 quart milk; let it cool, add 1 oz. butter, 1 egg, and season to taste with salt and cayenne. When cold, shape it in balls, egg and bread-crumbs each, and fry in hot fat. Serve with tomato or onion sauce.

Lobster Croquettes.—Use the fresh or canned lobster; strain off all the liquor and chop fine. Take 2 slices of bread, soak in water, remove the crust, squeeze dry, and mix with the lobster; season with salt, pepper, the juice of a lemon, and mix to a paste with a well beaten egg. Form into cakes, dip in beaten egg, then in sifted cracker crumbs, and fry in smoking hot fat.

Oyster Croquettes.—Take the oysters, beard them and chop fine, and mix into a firm paste with bread crumbs, moistened with the yolk of an egg, seasoned with parsley, sweet marjoram, pepper and salt. Cut into finger-shaped pieces, and fry a delicate color. Strain and serve piled high on a dish, garnished with parsley.

Potato Croquettes.—Take 2 cups cold mashed potatoes, 2 eggs, salt to taste, $\frac{1}{2}$ cup fine cracker crumbs; mix well, and roll on the kneading board with the hands in round cakes or long ones; scatter a little fine cracker dust on the board; egg and bread-crumbs, and fry until brown in smoking hot lard.

Rice Croquettes.—Take $\frac{1}{2}$ cup rice, boil until soft, let it cool and beat in 2 eggs, 2 spoons sugar, 1 teaspoon of salt; mold into balls, egg and bread-crumbs, and fry in smoking hot fat.

Rice and Chicken Croquettes.—Take 1 cup cold chopped chicken, seasoned with pepper and salt, and 1 cup boiled rice; heat together on a teakettle, pail or double boiler, and if the mixture seems dry, add a little milk; when hot, stir in 1 egg, beaten light, and take from the fire when thoroughly mixed. When cold, shape into balls, egg and bread-crumbs, and fry in smoking hot fat.

Veal Croquettes.—Take 1 heaping cup of cold chopped veal, 1 cup fine, dry bread crumbs, 1 teaspoon chopped parsley, a pinch each of sage and red pepper, 2 teaspoons lemon juice; moisten with sweet milk, heat it, and add 1 egg, well beaten; use milk enough to make it as soft as you can handle when it is cold. When cold, form it into croquettes, egg and bread-crumbs, and fry in smoking hot fat.

Kromesies.—Kromesies are croquettes cooked in the Russian manner; they are made as follows: Mince the remains of any cold meat, fish, poultry, or shell-fish, as for croquettes; season them nicely, and shape like a cork. Instead of dipping them in egg, and afterwards in bread crumbs, cut some slices of cold fat bacon (boiled) as thin as writing paper; wrap the croquettes in these, dip each one in a little frying batter, fry them in hot clarified fat, and when brown and crisp, arrange neatly on a hot dish; garnish with fried parsley, and serve immediately. Kromesies may be made according to any of the recipes given for croquettes, and should be cooked as above.

Scotch Collops.—Cut away the fat and any skinny portions there may be from about $1\frac{1}{2}$ lbs. of steak, and mince it finely, seasoning it well with salt and pepper. An onion can be added, if liked, but this is a matter of taste. Melt a little butter in a stew-pan, put in the mince, and stir it frequently to keep it from getting into lumps. In about 8 minutes, dredge a little flour over it, and pour upon it a little stock, boiling hot. Let it simmer gently a minute or two longer, and serve very hot. Three-cornered pieces of toasted bread may be put around the dish as a garnish.

Kouftas (*An Indian Dish*).—Chop cold meat finely, season it well with pepper, salt and spice, make it into a paste with the yolk of egg, form it into cakes, and fry it brown in butter.

EGGS.

The eggs of different birds vary much in size and color. Those of the ostrich are largest. They are said to be pleasant in taste, and to keep longer than hens' eggs. The eggs of the goose are large, but well flavored, while turkey eggs are almost as mild as hens' eggs. Ducks' eggs have a rich flavor, and the albumen is slightly transparent, or bluish when set by boiling. Guinea fowls' eggs are smaller and more delicate than those of the hen. The eggs of wild fowl generally partake somewhat of the flavor of the bird they belong to. Those of sea-fowl have a fishy taste more or less strong. The eggs of the turtle consist of yolk only, without shell, and are delicious.

Hens' eggs are the ones principally used, and when raw they weigh 2 to 2½ oz. The white of an egg is principally albumen, while the yolk contains most of the fat found in the egg, and most of the mineral matters, the latter being principally sulphur and phosphate of lime. The following table will show the percentage of the different elements in an egg.

	Water.	Albumenoids.	Fats.	Mineral Matters.
Eggs (whole)	72.0	14.0	13.0	1.0
The white	85.0	12.0	2.0	0.5
The yolk	53.5	15.0	30.0	1.5

The potential energy is about 720 Calories to the lb. It will be seen that eggs are very nutritious. They contain rather more albumenoids and less fat than an equal weight of butcher's meat. It will be noticed, however, that they are deficient in the carbohydrates, and hence bread, potatoes, rice, or other starchy foods, should be eaten with them to supply the elements they lack. It will be wise to use eggs freely, as they are nutriment in its most portable and concentrated form, and they are palatable to all classes of people. They are strengthening to consumptives and to all feeble persons, and young children. They are medicine as well as food. The white of an egg is a soothing application for a burn, as it coats it over and excludes the air, and it is an antidote for various poisons like corrosive sublimate, creosote and acids, as these articles coagulate albumen, and if white of egg is given soon after they enter the system, it combines with them and protects the stomach.

Children do not receive into their systems a sufficient supply of lime for the development of bones, if eggs form a large part of their diet, for the albumen and vitellin of eggs, although highly nutritious, and adapted to the making of muscle, is deficient in lime. The embryo chicken takes its lime for the growth of bone from the shell of the egg, which diminishes in thickness day by day, until the time of hatching, when it becomes so thin as to be easily broken for the escape of the chicken. If the water supply of the family is in a limestone formation, children will get a sufficiency of lime through the medium of water; but if the rock formation is primitive, and the water very soft, the defect may be remedied by the use of lime-water, as explained in the chapter on "Invalid Cookery."

Invalids should never be given eggs which are more than 2 or 3 days old, as they will then have begun to deteriorate. The albumen in an egg will not become thick enough to beat well until it has been laid about 10 hours; for boiling or poaching, eggs 1½ day old are best. The philosophy of cooking eggs is explained in our article on the principles and processes of cooking meat, which see.

In breaking eggs, each one should be broken separately into a cup, and then there will be no danger that a bad egg will spoil other eggs or materials. Also be careful not to break the yolks, as that will spoil them for poaching, frying, etc.

When putting eggs in to boil, great care should be taken not to crack the shell, as a portion of the white will then exude inevitably, and it lets water into the egg. When fresh eggs are dropped into a large quantity of boiling water, they crack, because the interior, being full, is expanded by the heat, and the shells give way. If the quantity of water is small, the shells do not crack, because putting cold eggs into hot water lowers its temperature. Stale eggs do not crack because the air inside is easily compressed. Prick pin-holes in the large end of the shell to keep the contents from oozing out through the crack, if an egg is cracked before putting it into the water.

Directions for purchasing, testing and preserving eggs, are given in our articles on marketing and on keeping provisions.

Eggs should *always* be washed as soon as they come into the house. Take a little cloth and carefully remove every particle of soil from the eggs, and then the shells will be ready to use in clarifying coffee or soups.

Coloring and Dyeing Eggs.—Eggs can be easily dyed for Easter, etc. The aniline dyes are useful for the purpose. A simple plan is to place the eggs in colored water and boil them in it. Mottoes, monograms, etc., may be produced as follows: Draw upon the shell with simple oil and a camel's hair brush, whatever name or device it is wished to display; then place it in the coloring liquid and the portions touched with oil will remain white, while the remainder will be dyed. In a similar way the ground may be left white while the designs are colored. Wrapping them in calico which is brightly colored, and then boiling them in lye, will also color them. Eggs can be colored brown by boiling them in strong coffee, and yellow with onion peelings. Cochineal will color them any shade from crimson to pink, according to the quantity used. Logwood chips will color them any shade from port wine to black, by varying the quantity used. They can be made like gold or silver by coating them with painters' size (after boiling them hard) and then rolling them in a plate containing gold or silver dust, such as bookbinders use, until they are entirely covered, or a name or other device may be put on in this way. A little butter or oil rubbed over the egg, when it is sufficiently cool to handle, after being boiled, gives it a nice, bright look.

Vaulting Eggs.—Eggs that will turn somersaults to amuse the children may be made as follows: Blow out the inside; then hold the finger over the hole in the small end of the shell, and pour a tablespoon of fine shot into the other; then hold the finger over the hole the shot went in, reverse the egg, and pour in through the other hole just enough melted wax or mutton suet to set the shot; paste a piece of paper over the hole in the large end, and glue a little worsted tassel in the upper hole. Paint, or mark with ink, a clownish head and body on the egg. When done, stand him on his head and he will do the rest.

Baked Eggs.—Cut bread into nice square pieces and toast. Take eggs out of the shell, keeping yolks whole. Beat the whites to a stiff froth, lay the beaten white around nicely on the toast, drop yolks in center of white ring, sprinkle on salt and put in hot oven to bake a few minutes. When you take them out of the oven, pour a little melted butter on the toast. A nice way of serving eggs.

No. 2.—Grease a pie-plate well with butter, break into it as many eggs as it will conveniently hold, and bake until the whites are fully set and the yolks slightly hardened; slip them on to a hot platter, and drop bits of butter over them, with a sprinkling of salt.

To Boil Eggs.—Many fairly good cooks do not know how to boil eggs in the best manner. There are 2 good ways. One is to put them into cold water, gradually bring it to a boil, and as soon as the water commences to boil, they will be done. Another way is to put them into a sauce-pan and pour on boiling water enough to cover them; pouring the hot water on the eggs will lower its temperature a little; then let it simmer, not boil, until they are done, keeping the water about 180° to 185°.

It takes longer to cook eggs in this way than when they are put into boiling water, but when done, they will be jelly-like instead of tough and leathery, and are more easily digested. The length of time to leave them in the water depends on the individual taste. An egg to be soft-boiled should not be cooked in boiling water, for then the albumen near the outside will become tough before the yolk is heated. To hard-boil an egg, it needs only to be left in the simmering water longer—say 20 to 30 minutes; it will then be solid but not leathery; the yolk is more mealy when cooked 20 minutes than when cooked 10. Eggs for salads, etc., should be thus hard-boiled, and, when done, put in a basin of cold water a few

minutes; then roll them on the table with the hand and the shell will peel off easily. Do not cut up eggs for garnishing purposes until about the time they are needed, or the yolk will dry up and get discolored.

Breakfast Eggs.—A nice breakfast dish is made by taking eggs from the shell and boiling them 2 minutes in a cup of sweet cream; then season with salt and pepper.

Creamed Eggs.—Remove the shells from 6 hard-boiled eggs, cut them in halves, and cut a slice off the round end, enough to make them stand. Put 1 tablespoon of butter in a sauce-pan to melt; add 1 tablespoon flour, mix till smooth, add 1 teacup milk or cream, and stir until it boils; season with salt and pepper. Stand the eggs on a heated dish, pour the sauce over, and serve.

Curried Eggs.—Cut some hard-boiled eggs in halves; cut off the white end sufficiently to make them stand upright; then pour some curry sauce around them, and serve.

Deviled Eggs.—Boil 1 doz. eggs hard; cut in two, lengthwise, take out the yolks, and mash them. Prepare 2 teaspoons of mustard by pouring a very little boiling water on, and mix smooth; add a small teaspoon of butter, 1 of sugar, a little salt, and a few drops of vinegar. Mix some of the prepared mustard with the yolks, and refill the white part of eggs with the dressing. They make a nice garnish for lettuce, and also a nice dish for picnics. Other stuffings can be devised and filled into the whites in the same way. Cut them in two crosswise instead of lengthwise, if preferred.

Dropped Eggs on Toast.—Have ready a dish of boiling water, well salted, break the eggs into a saucer, and slide into the water, one at a time. Let the water keep at a boiling point, but not bubble, and dip the water with a spoon over the top of the eggs. Have ready some nice buttered toast, take the eggs up with a skimmer, lay on the toast, dust a little salt and pepper over them, and serve.

Escaloped Eggs.—Boil 1 doz. eggs for 25 minutes; put in cold water and take off the shells. Slice the eggs, and put them in a pudding-dish in alternate layers with bread crumbs, having a layer of the finest crumbs on the top of the dish. Season each layer of eggs with pepper, salt, and a little chopped parsley, if liked, and before putting on the top layer of crumbs, pour over it a pint of sweet cream. Bake until browned on the top. Serve hot. A good country dish for luncheon, tea or breakfast.

Fried Eggs.—Take a hot frying-pan, put in a lump of butter, let it melt, and then drop in the eggs; let them fry 3 minutes; add salt and pepper to season; lift out with a skimmer. The nicest way, however, is to use the egg-molds now made for the purpose in various sizes. In each mold put a piece of butter, and when melted, drop in the eggs; to prevent the under side from being over-done, loosen the edges every few seconds; season with salt and pepper, and take out with a spoon when done. Sorrel, spinach and green salads are nice with them. If a few eggs are fried in a large mold, put hot water in the unused forms.

Cold fried eggs can be used for salad, or revamped by dipping them in fritter batter, and frying. A fine sauce for fried eggs is made of stewed tomatoes, grated cheese, and a couple of chopped up boiled sausages.

Egg Gems.—Mix together chopped cold meat and bread crumbs, in equal quantities. If liked, a tiny bit of onion, chopped very fine, may be added to the meat and crumbs. Season with pepper, salt, a spoonful of melted butter, and enough milk to wet and bind it together nicely. Have some gem-pans well greased,

and fill with the mixture; then break an egg carefully on the top of each, season it with a little salt and pepper, and sprinkle some fine cracker or bread crumbs on the top. Bake 8 minutes.

Omelets.—These light and simple dishes require practice to prepare them to perfection. Do not cook them until just before they are needed, and then serve them at once on a very hot dish. The mixing is simpler than the cooking. Any smooth iron spider will answer, but have it very clean. Have a clear fire, and the pan hot before making the omelet. Mix the omelet, moisten the bottom of the pan with a little butter, pour in the omelet, and as soon as slightly brown underneath, turn one half over the other with a knife, let it harden a moment, and turn out on a plate, or lift out with a pancake turner. Brown the omelet merely—never burn it, as the scorched egg flavor is an injury to it. Numerous flavorings can be added, and the name will be derived from the meat, fish, vegetable or herb used.

Omelet, No. 1.—Beat 6 eggs very light, the yolks and whites separate; add $\frac{1}{2}$ teaspoon salt, and 3 tablespoons of milk; have a very hot pan, put in 1 tablespoon of butter, pour in the egg mixture, shake on the hottest part of the stove until the egg begins to thicken, then place on a grate in the oven until set; run the knife between the omelet and pan, fold the omelet over, and serve on a hot dish.

Omelet, No. 2.—Take 6 eggs, beat yolks and whites separately; add 1 teacup milk, 1 tablespoon flour, 1 tablespoon butter, salt and pepper to taste. Cook, and serve hot.

Baked Omelet.—Take 4 eggs, yolks and whites beaten separately; 1 cup of milk, 1 tablespoon of flour and a little salt; add the whites just before putting the mixture in the oven. Bake 20 minutes in a well-buttered dish.

Baked Omelet, No. 2.—Six eggs, 1 cup of milk, 1 tablespoon of flour, a pinch of salt. Beat the whites and yolks separately. Mix the flour, milk and salt, add the yolks, then add beaten whites. Have a buttered spider very hot; pour in. Bake in a quick oven 5 minutes.

Green Corn Omelet.—Take 6 ears corn, grate or cut the kernels fine, add 4 eggs, 1 tablespoon flour, 1 cup milk; season with salt and pepper, and bake $\frac{1}{2}$ hour.

Orange Omelet.—Mix a little orange juice, grated rind, and sugar, with the eggs before cooking them; or slice the oranges, removing the seeds and skin; make a plain omelet, and fold the omelet over part of the oranges, and spread the rest on top when it is done, sugaring the top also.

Queen Omelet.—Use 2 extra yolks to every egg. Beat fast for 2 minutes. Have the frying-pan or spider hot, with a piece of butter the size of an egg; set in a hot oven and bake. When done it will be a light puff, and the extra yolks will keep it in shape and prevent its falling. Sprinkle with salt, and, if liked, with sugar; turn on a hot plate, sprinkle the other side with salt, and send to the table.

Rice Omelet.—To 1 cup of steamed or boiled rice, add 1 cup of water, 3 well beaten eggs, and 1 teaspoon of butter; season with salt and pepper, and, if liked, with a little finely chopped ham. Bake until it is a light brown.

Sweet Omelet.—Do not use any pepper, but add a little sugar—about 1 teaspoon for each egg. Make like a plain omelet, and when done, sprinkle sugar on top. This can be varied by putting any desired kind of jam, jelly, marmalade or preserves on top, or they can be folded inside when the omelet is folded over.

Omelette Souffle.—Beat thoroughly together the yolks of 6 eggs and 6 tablespoons of pulverized sugar; flavor with vanilla or lemon, and then beat the whites of the eggs to a stiff froth, and stir lightly and quickly with the yolks and sugar;

bake in an enamelled pudding-dish, or in small paper *souffle* cases, one for each person. The souffles should bake 10 or 15 minutes in a moderately hot oven, and be sent to the table immediately, as they soon fall. Blanched and pulverized sweet almonds can be added to the above for *Almond Souffle*.

Various Omelets.—Any sort of an omelet can be made by folding into the omelet either sardines, tomatoes, ham, oysters, cheese, kidney, mushrooms, macaroni, or whatever one desires or has on hand. Asparagus tops are nice in an omelet. The ingenious cook can devise many new and attractive dishes.

Poached Eggs.—Break the eggs separately into a cup; let them slide gently into boiling water with a few drops of vinegar in it. Take them out and serve on hot buttered toast. They are often conveniently poached in a frying-pan; when poached in quantities they are apt to run together. In poaching eggs, a few drops of lemon juice or vinegar in the water keeps the whites from spreading.

Eggs Poached in Gravy.—Poach the eggs in gravy instead of water. Serve them in their gravy, if clear. Or, poach the eggs in water, and serve with rich gravy poured round them.

Ham and Eggs.—Prepare thin slices of fried or broiled ham, and serve a poached egg on each one.

Spanish Eggs.—Serve poached eggs on highly seasoned, hot, boiled rice.

Anchovied Eggs.—Prepare slices of toast, spread them with butter and anchovy paste, and put a poached egg on each slice. Sardine paste may be used instead of the anchovy, if preferred.

Scrambled Eggs.—For every egg allow an even tablespoon of melted butter and a tablespoon of sweet milk. When the butter and milk is hot, put in the eggs without beating, and stir. When it begins to cook, scrape fast from the bottom of the frying-pan to keep from scorching. Take off while very soft, as they cook a half minute after being taken off, for which many cooks do not allow. Serve by itself hot, or on toast. A dash of lemon juice added just as they are going to the table is an improvement.

Scrambled Eggs, No 2.—Beat the eggs, and allow 1 tablespoon of milk for each egg; season with salt and pepper, and fry in a buttered frying-pan, and while cooking, stir from the bottom. A few spoonfuls of boiled string-beans, or boiled peas, or tender ends of asparagus left over from dinner, can be stirred in; these are nice, furnish variety, and use up remnants. Try and devise new dishes.

Scalloped Eggs.—Moisten bread crumbs with cream; place a layer in the bottom of a buttered dish; slice hard-boiled eggs, and put a layer of them, with butter, pepper and salt, with chopped cold meat; continue until the dish is full; sift grated crumbs over the top, and put bits of butter on it; set it in the oven and bake 10 minutes.

Shirred Eggs.—Take 6 eggs, 3 tablespoons of gravy—from poultry is best—enough fried toast to cover bottom of a flat dish, a very little grated cheese, 1 teaspoon butter. Melt the butter in a frying-pan; when hot, break into this the eggs. Stir in gravy, and season; stir quickly and well up from the bottom, until the whole is a soft yellow mass. Have ready in a flat dish the fried toast. Heap the shirred eggs upon this, and serve before it hardens.

Scotch Eggs.—With 1 cup of cooked ham, chopped fine, mix $\frac{1}{2}$ a cup of bread crumbs made into a paste with $\frac{1}{2}$ a cup of milk, $\frac{1}{2}$ a teaspoon of prepared mustard, a little salt, and 1 egg, well beaten; hard-boil 6 eggs, remove the shells, and cover them with the prepared mixture, and fry about 2 minutes in very hot fat;

serve either hot or cold. Chicken, veal or salmon may be substituted for the ham, but lemon juice should be added to the seasoning if salmon is used.

Steamed Eggs.—Break each egg into an egg-cup, set them in a steamer and steam until cooked. They can be put in buttered patty-pans, if more convenient, and then steamed. Serve hot.

Stuffed Eggs.—Cut hard-boiled eggs in two, take out the yolk, and mix it with fried onions, a little finely chopped ham, and parsley, pepper and salt; fill the whites with this mixture, and fry until the yellow browns a little.

Egg Toast.—Take a tablespoon of butter and 2 of cream, and warm together in a frying-pan. Break 6 eggs in it and stir lightly until cooked; have well seasoned; have buttered slices of toast, spread the mixture on it, and serve hot.

MILK, BUTTER AND CHEESE.

MILK.

Milk is the only food which, taken alone, will support life in all its stages. It is the only perfect food for children, and in old age it is one of the most valuable foods known. The fat rises in the form of cream; curd is the nitrogenous matter, and the whey contains sugar of milk, or lactose, with the salt or mineral matter. Milk differs as procured from different animals, but its general characteristics are the same in all, and that of the cow is most generally used. Unless the milk is of the best quality, all the preparations made from it will be of an inferior character. Milk when of good quality is of an opaque white color, although the color slightly varies in different breeds of cattle, and that from poorly fed cattle is inferior in quality. One pint of good cow's milk will contain:

17 oz. and 330 grains of water.
 370 grains of casein (curd).
 393 grains of milk fat (butter).
 1 oz. and 22 grains of milk sugar (lactose).
 72 grains of mineral matter (salts).

The composition of milk, butter and cheese is as follows:

	WATER. %	ALBUMEN- OIDS. %	CARBOHY- DRATES. %	FATS. %	MINERAL MATTERS. %	POTENTIAL ENERGY IN 1 LB. CALORIES.
Milk.....	87.0	3.6	4.7	4.0	0.7	325
Butter.....	10.5	1.0	0.9	85.0	0.5	3615
Cheese, full cream..	30.2	28.3	1.8	35.5	4.2	2070
Cheese, skim-milk...	41.3	38.4	8.9	6.8	4.6	1165
Oleomargarine.....	11.0	0.6	0.4	85.0	3.0	3605

The mineral matter contained in milk consists of chloride of sodium, phosphates, acetate of potassa, and lactate of iron.

Milk when taken into the stomach is coagulated by the acids in the gastric fluids, and the coagulum (*curd*) is digested like any other solid. The watery parts are absorbed. If much milk is drunk rapidly it will form a solid mass; if it is sipped a little at a time it will be broken into small parts, and will, therefore, be more easily digested. A quantity of acid taken into the stomach just before or after drinking milk is apt to harden the curd, and so interfere with its digestion. Between milk, flour and blood, there is great similarity of composition. The curd is the albumenoid part. From no other substance, solid or fluid, can so great a number of distinct kinds of aliment be prepared as from milk, some forming food, others drink; some of them delicious and deserving the name of luxuries, all of them wholesome, and some medicinal. Milk when first drawn from the cow is slightly alkaline, but afterwards lactic acid is formed, so that it becomes first neutral, then acid, and the acidity goes on increasing until it is perceptible to the taste; this acidity is thought to assist in the rising of the cream. In milk we have the tissue-making elements in its casein, and the heat-making in its butter; the curd or casein is changed to albumen again in the process of digestion. The souring of milk is caused by the bacteria which alight on the milk and cause a fermentation which acts on the lactose (sugar of milk) and forms lactic acid, which causes the sourness. When enough acid is formed it will unite with the soda in the casein, making lactate of soda. The casein, when thus deprived of its soda, is insoluble in water, and it shrinks into a curdy mass. The introduction of an acid will hasten the process, as is done in making cheese.

Solidified milk is made by sweetening fresh cow's milk, and evaporating it to dryness in a water bath; when re-dissolved in water, it is said to have all the qualities of fresh milk. This preparation of milk is sometimes called *lactoline*.

Sugar of milk is the dry, white, nearly tasteless powder used by physicians in preparing medicine in powders. It does not gather dampness like cane sugar, and will keep in good condition for years. It is sometimes given to children by itself, as a remedy in certain conditions of the system. It is made from evaporated whey.

Canned or Condensed Milk.—This is now to be obtained in all parts of the civilized world, and is invaluable, as, being evaporated by steam and hermetically sealed, it will keep for an indefinite time, while sealed, and after the can is opened, if care is taken, it will keep good for a week. The directions for reducing

it are on the can. There is cane sugar added to it before condensing, and it has the color and consistency of thick, opaque honey. It can be used clear, a teaspoonful to a cup of coffee, without sugar, as it is already sweetened. Diluted to the right consistency, it is much used as a food for infants. When good milk is difficult to obtain, condensed milk is a great blessing, for, being sterilized by extreme heat, it is free from dangerous germs. The large amount of cane sugar which it contains, and which is added to preserve it and prevent its thickening in the can, renders it somewhat less suited for infants than the natural milk, however.

Sour Milk.—If milk sours on your hands, do not throw it away—it can be used in various ways, as in making corn bread, soda biscuit and all kinds of pancakes, while many cooks prefer it to sweet milk, in making cookies, doughnuts and gingerbread. Sour milk can be substituted for sweet in making most kinds of cake, but remember in that case that only half as much cream of tartar should be used as the recipe calls for.

Buttermilk also has many uses besides being used as a drink (to drink, it should be fresh) as it can be made into soup, or used in making corn bread, pancakes, soda biscuit, and many kinds of cake.

For hints on keeping milk, see our article on Keeping Provisions; and for the adulteration of milk, see our article on the Adulteration of Food.

BUTTER.

Butter is the solidified oil or fatty matter of the milk of animals. The Greeks and Romans neither employed it in cooking, nor had it brought upon their tables; they used it only as an ointment in their baths. The Hebrews appear to have used it as food from an ancient date, and in England it has been used from very early times. In making butter the utmost care is required in all the manipulations from the time it leaves the cow until it is packed. The peculiar flavor of butter is derived principally from the butyric acid it contains. In the milk, the globules of fat are held in solution, by the albumenoid (or proteid) matters, forming what is termed an emulsion. The albumenoid matter must be separated from the butter before or during the process of churning, or the butter will not keep well.

For suggestions about keeping butter, and how to sweeten rancid butter, see our article on "Keeping Provisions."

To Make Butter Quickly.—Immediately after the cow is milked, strain into clean pans and set over a moderate fire until it is scalding hot; do not let it boil; then set it aside, and when cold, skim off the cream, and the milk will still be fit for any ordinary use. When you have enough cream, put it into a clean earthen basin, beat it with a wooden spoon until the butter is made, which will not be long; then take it out of the milk and work it in a little cold water until it is free from milk, then drain off the water, put in a small tablespoon of fine salt to each lb. of butter and work it in. A small teaspoon of fine white sugar worked in with the salt will be found an improvement; sugar is a great preservative. Make the butter in a roll, cover with a piece of muslin and keep in a cool place.

An easy method of washing butter is to remove the butter from the churn, pour off the milk or buttermilk, as the case may be, half fill the churn with cold water (a little salt may be added to the water), replace plunger and throw back the butter, and operate the churn as before for 1 minute. This process will extract all the milk from the butter, which may then be placed in a sieve to allow the water to strain from it, and then worked in the usual manner.

Butter, to Salt (*Irish Recipe*).—To 1 lb. of common salt add 1 lb. of saltpetre and $\frac{1}{4}$ lb. of white sugar; pound all these together and mix them well, and to every pound of butter allow 1 ounce of this mixture; make it fresh as you want it, observing to be careful always to keep the same proportions, and to mix the ingredients thoroughly. The butter should stand a month before you use it, to ripen.

Butter to Salt, No. 2.—One pound of best salt, 4 oz. of sugar, and 1 oz. of salt-petre; pulverize it well together, and allow of this, 1 oz. to the pound of butter.

Clarified Butter, or Ghee, as it is called by the Arabs, is prepared as follows: Put butter in a farina boiler or porcelain bowl, put it on the stove and bring to a boil; when cheesy, thick, white grains form, move it to the back of the range; the buttermilk which rises to the top should be skimmed off; after it has settled, strain it, and the clear, oily fluid remaining can be bottled for use. It can be kept for years, and for frying oysters, fritters, etc., there is nothing better known.

Substitutes for Butter.—*Butterine.*—In preparing this, lard is heated to a temperature not exceeding 120°, and the oil is separated; a similar oil is obtained from beef fat, the 2 are mixed, and they are then churned with milk, making the butterine of commerce.

*Oleomargarine.**—In preparing this, beef fat is washed, ground, and heated to 120° to 200° to separate the oil, which is known as "butter oil." This is cooled, salted, put into milk, a little annatto added to give it color, and it is then churned and worked like butter. In preparing butterine and oleomargarine only the best fats can be used, for there is no way now known to remove the unpleasant odor of fat if it is at all foul. These preparations are about as nutritious as true butter, and if properly used they are a most valuable addition to the food of the poorer people, who commonly suffer from a want of fatty food. Strict laws have been passed in some of the states against their sale except under their true name, and this is very desirable. It is a fraud to sell them for pure butter, but if well made, and sold for what they really are, they merit an extensive sale. They are certainly preferable to the poorer grades of butter, often partly rancid, which are frequently sold in the large cities. The objection to their use rests rather on sentiment and prejudice than on any physiological basis. They are to be considered rather as substitutes for, than imitations of butter.

Other substitutes for butter are the vegetable oils; olive oil is best, if pure, but it is often adulterated with inferior oils. Peanut oil is excellent, and cotton-seed oil of late has taken an important place in cookery; it is inexpensive, and a less quantity is required than of butter in cooking. A preparation of cotton-seed oil and beef suet has been widely advertised, and is much used instead of butter and lard. Sesamum or Benne oil should be better known; it is easily raised in the southern states. It is a bland and odorless oil, and a most excellent substitute for olive oil in salads. It keeps for a long time without becoming rancid, if stored in a dark place. Poppy-seed oil is also being used now somewhat. We believe the day is near at hand when some of the vegetable oils will largely supplant lard and other animal fats in nearly all cooking operations.

Some people who have a dread of "margarine," take a piece of fat pork, melt it down, and strain it through a piece of coarse, thin muslin; then set it aside until it is cold. It is then white and firm, and may be used like butter in any kind of cake. In pound cake it is delicious.

A Word About Fats.—And right here we may say a few words about different fats. There are 3 substances called "stearin," "margarin," and "olein" which, without exception, principally make up all the fats we consume. They are called "neutral fats," and the fact that they melt at different temperatures constitutes

*It was during the Franco-German war of 1870-71 that a French chemist Mege-Mourier acting under instructions from Napoleon III, went into his laboratory and invented the process of making a substitute for butter, designing it for use in the French army. The process has since been further perfected, and the making of these substitutes has now become a great industry.

the principal difference between them. There is a small amount of what are known as "fatty acids" in the vegetable oils, and in butter there is from 5 to 8 per cent of 4 of these fatty acids (butyric, capronic, caprylic and caprinic) and from these butter derives its peculiar flavor. Olein melts the most easily, and stearin the least so. The fats which melt most readily are the most digestible, and are most readily assimilated by the system, but the healthy stomach readily disposes of any fat used in the household, in reasonable quantities, although it should be taken into the system finely divided instead of in lumps. It will readily be seen, therefore, that all the fats are substantially alike, and when once they are assimilated, they perform the same services for the body. Their flavors, and the readiness with which they melt in the mouth and in the digestive tract, make some forms, like butter, more palatable than others. Mutton fat would do about as well as any, but it is not swallowed readily because it contains so much stearin. The body requires a certain amount of fat, but it makes very little difference which one it takes, and for this reason the introduction of some cheaper forms of fat, in such a shape that they will be palatable, will be a great benefit to the mass of the people. We believe, as we have elsewhere stated, that some of the vegetable oils will soon be quite generally used, and it is certainly to be desired that they should be. Wealthy people will always use the best butter, but the mass of the people should understand what the cheaper substitutes are, and their properties and merits, and certainly there is no hygienic or physiological reason why they should not use these cheaper substitutes, and so make a material saving in the household expenses.

CHEESE.

When milk is curdled it separates into two portions—curd and whey. The former consists of the butter and casein, and produces cheese; the latter is mainly water, holding the sugar and mineral constituents of the milk in solution. Any acid introduced in milk has the curious property of coagulating the curd or casein. This acid is supplied by the "rennet," but in some countries a weak solution of hydrochloric acid is used instead. In preparing cheese for cooking, old cheese should be grated, and new and soft ones should be chopped.

An analysis of cheese shows it to be one of the most nourishing of foods, 1 lb. of average cheese containing more nutriment than an equal weight of ordinary meat. Eaten raw it is not suited to persons of weak digestion or of sedentary habits, and it tends to produce costiveness. If it could be properly cooked it ought to be one of the most desirable of foods. It is frequently over-cooked, converting it into an air-tight, leathery substance, which is harder to digest than the raw cheese. When lightly cooked it is easily assimilated, and very nourishing. In fact it is too nourishing to be eaten heartily as an accompaniment to meat; it is more adapted for the main course of the meal. It is most deficient in the salts of potash, which, on account of their great solubility, are left behind in the whey. Eating freely of fruits or salads will supply these salts, but vegetables do not answer the purpose, because in ordinary methods of cooking them, their salts are dissolved out and wasted. With the advance of scientific knowledge and scientific cookery the true value of cheese for food will some time be better appreciated, and it will take a much more important place among the foods of the race than at present, we believe, and it is certainly entitled to it. We would add that some of the German scientists have recently been investigating the digestibility of cheese. Dr. Rubner found that when taken alone he could not consume much of it, but when taken with milk he easily assimilated nearly $\frac{1}{2}$ lb. The softer kinds are very largely used in Germany. Except in fat, skim cheeses are as nutritious as any others.

For hints about purchasing and keeping cheese see our articles on Marketing and on Keeping Provisions.

Rennet.—This is made from the fourth or lowest stomach (the *abomasus*) of the calf. Soon after the animal is slain the stomach should be cut open at one end, emptied of the curdled milk, and turned inside out; then with a damp cloth, dipped in dry salt, carefully wipe the inside of the bag until it is free from any particles of curdled milk; do not wash it, as that extracts the gastric juice. Rub fine salt thoroughly into both the inside and outside of the bag, place it in a bowl, and cover it to keep out the flies. The next day there will be a brine formed with the salt; turn the rennet-skin in the bowl, and let it stand another day to

pickles. Take a long, slender, green, wooden stick, make it into bow shape, and stretch the rennet bag on the stick and hang it up to dry. When thoroughly dry, do it up in paper so that no insects can get into it, and keep it in a dry place.

To Prepare Rennet.—When wanted for use, the dried rennet is cut in pieces about an inch square, and if to be used for invalids' curds it is put in a bottle with wine; a piece half the size of the hand is enough for a pint of wine; it must be kept well corked. It is better to have the druggist prepare the rennet-wine after his formula. A teaspoonful is enough to "set" a quart of sweetened milk. Set the milk on some solid foundation, as it then coagulates with much less rennet than when it is jarred by people walking near it. For dairy purposes the rennet is steeped in a weak brine, but that way of preparing it is not the best for invalid cookery.

The usual mode of serving cheese, is to cut the desired quantity into neat, square pieces, and put them in a glass cheese-dish, in which it is handed around the table. If the cheese is too crumbly to be served in this manner, the host or hostess can have the large piece of cheese placed on the table, with a cheese-scoop to serve it with, or a heavy silver spoon. The cheese must be nicely scraped before serving in the latter way. When there is a cheese course at dinner, several kinds of cheese are placed on the table at once, cream cheese, Parmesan, Stilton, etc., etc., and rusks, crackers, or fancy biscuits, fanciful pats of butter, lettuce, cucumbers or cresses, are served with the cheese.

Parmesan cheese is, perhaps, the most celebrated of the foreign varieties. It is made of skimmed milk, and owes its rich flavor to the fine, sweet herbage of Lombardy about Parma and Pavia, in Italy, where the cows are pastured. It is distinguished by its power of keeping, and after being kept some time becomes hard, and needs to be grated before it can be used.

Boiled Cheese.—Take 2 thick slices of cheese, 1 teaspoon of butter, $\frac{1}{2}$ teacup of milk, a little sugar and mustard, 1 egg, pepper and salt to taste. Put all the ingredients, except the egg, into a clean pan, and stir over the fire until they boil and become quite smooth; then beat the egg well, and stir it in over the fire for a minute, after which pour out on a dish and brown in the oven.

Cream Cheese.—Dip a cheese cloth in salted water, and put it in a square dish or baking-tin, having first laid a folded napkin in the dish; on the cheese-cloth put the thickest cream you have—it must be perfectly sweet (Devonshire cream is the best); pour the cream in, a little at a time, and sprinkle a little salt on each layer; fold over the cloth and let it lie until the next day; then turn it into a dry cloth, put a dry, folded cloth under it, put a little square platter on it, and set a flatiron on the platter; change the dry cloth once more, and on the third day it is ready to eat. If preferred, this cheese can be made in a round form in a pudding-dish.

Cottage Cheese.—Put a pan of sour or loppered milk on the stove or range where it is not too hot; let it scald until the whey rises to the top (be careful not to let it boil or the curd will become hard and tough). Place a clean cloth or towel over a sieve, and pour this whey and curd into it, leaving it covered to drain 2 or 3 hours; then put it into a dish and chop it fine with a spoon, adding a teaspoon of salt, a teaspoon of butter, and enough sweet cream to make the cheese the consistency of putty. With your hands make it into little flattened balls. Keep in a cool place. Some like it made rather thin with cream, serving it in a deep dish.

Devonshire Cream.—The milk should stand 24 hours in the winter, and half that time in warm weather; then the milk pan is set on the stove, and should there remain until the milk is quite hot, but it must not boil. When it is sufficiently done, the undulations on the surface look thick, and small rings appear. The time required for scalding cream depends on the size of the pan, and the heat of the fire, but the slower it is done the better. Set it back in the dairy

again, after scalding, and skim the following day. This cream is so much esteemed that it is sent to the London markets in small square tins, and is exceedingly delicious when eaten with fresh fruit. In Devonshire, butter is made from this cream, and is usually very firm.

Cheese Fritters.—Put into a sauce-pan 1 pint of water, $1\frac{1}{2}$ oz. of butter, a teaspoon of black pepper, and a pinch of cayenne, and bring the water to boiling point; then gradually stir in flour enough to make a thick paste. Remove from the fire and incorporate $\frac{1}{4}$ pound of grated Parmesan cheese, the whites of 2 eggs beaten to a froth, and the yolks of 4. Let the paste stand for 2 hours, and then fry in little pieces, dropped into boiling lard. Sprinkle a little salt over them before serving.

Fondue.—Beat 6 eggs until light; season with salt, pepper and 2 tablespoons grated cheese; put a tablespoon of butter in a frying-pan; when hot, pour in the eggs and stir until well done and smooth; serve on buttered toast.

The Home Cheese Scallop.—Soak 1 cup of dry bread crumbs in fresh milk; beat into it 3 eggs, add 1 tablespoon of butter and $\frac{1}{2}$ lb. of grated cheese; strew upon the top sifted bread crumbs, and bake in the oven a delicate brown.

Italian Curds (*Gallino Curds*).—Take a number of the rough coats that line the gizzards of turkeys and fowls; clean them from their contents, rub them well with salt, and hang them to dry. When needed for use, break off bits; pour over them a little hot water, and after standing over night it is ready for use. It makes a more delicate curd than calf's-rennet. Warm 2 quarts of milk, and add some of the gallino liquor, and, when the curd is well set, dip it carefully with a large spoon or ladle into a colander over which a cheese-cloth has been spread; handle it carefully so as not to start the white whey. When the whey has separated from the curd, so that it has consistence, sprinkle with salt, and send to the table.

Cheese and Macaroni (*Italian Mode*).—Boil 6 ounces of the best macaroni in 3 pints of boiling water, with a little pepper and salt. Allow it to simmer gently for 15 or 20 minutes, then drain it, return the macaroni to the sauce-pan with $\frac{1}{2}$ a pint of good gravy and allow it to simmer until it has absorbed all the liquid. Have ready grated $\frac{1}{2}$ lb. of cheese, put half of it with the macaroni until it is nearly melted, and then add the remainder with an ounce of butter. Stir it well, always the one way, until cheese and macaroni are well mixed. Serve very hot. A little short crust bordering the dish is an addition.

Polpetti (*Italian*).—Chop cold meat finely, either roast or boiled; season with mushrooms or truffles, and grated Parmesan cheese, nutmeg, salt, pepper and chutnee sauce; spread on a tin to cool, after being well heated together; cut in small squares when cold, dip in egg, and then in bread crumbs, and fry in hot lard. Serve with plain boiled macaroni and cream.

Potted Cheese.—To pot cheese is an economical way of disposing of any that has become dry. Cut the cheese into small pieces, and pound it smoothly in a mortar, adding a little nice, sweet butter, just sufficient to make a paste suitable for spreading on bread for sandwiches; add a little mixed mustard, and a trifle of cayenne to the paste; pack in little earthen pots, if to be set on the table for an appetizer, cover closely, and set in a dry place; if there is danger of mold, put a few drops of extract of cloves on the top of the paste before covering; or, if preferred, a thin layer of nice salad oil.

Smear Case.—Pour boiling water on clabbered milk, till the curd separates

from the whey; let it stand till the curd settles, then pour cold water on it and stir; let settle, drain water off; do this till the water is clear, then let it settle, and squeeze out enough curd for one meal. Season with salt, pepper and sugar, and pour good, sweet cream over. You can keep it in water for several days, by changing the water every day.

Cheese Straws.—Mix together 4 tablespoons of flour, a pinch of salt, a very little cayenne pepper, and 3 oz. of grated English cheese. Add the beaten yolk of an egg, and then enough iced water to make a very stiff paste. Roll the paste out on a board into a sheet $\frac{1}{8}$ of an inch thick. Cut the paste into strips $\frac{1}{8}$ of an inch wide and 5 inches long, and bake them about 10 minutes in a very hot oven. They should be a very light brown. If you have any scraps of paste left, roll them into a sheet, and cut it into small rings. Bake them, and slip little bundles of the straws through them.

Toast with Cheese.—In 1 cup of milk stir 1 cup of grated cheese, and boil until the cheese softens in the milk; then add 2 well-beaten eggs; stir until it boils, take from the fire and spread over nicely-browned toast. Served very hot. This will be found enjoyable. It is a nice dish for breakfast or tea.

Welsh Rarebit.—Cut slices of stale bread about $\frac{1}{2}$ inch thick, and toast them a nice brown on both sides (take time enough so that it can be well done without scorching, and this rule will apply to making toast at any time). Have as many thin slices of rich, mild cheese as there are of the toasted bread; dip the edges of the toast in hot water, and spread with softened butter; lay a slice of the cheese on each slice of toast, and set the platter on the top shelf of a hot oven until the cheese is melted into the toast and slightly browned. Another way is to lay each slice of toast on a blue-edged English baking-plate, just a little larger than the toast; dust a little cayenne, or pepper, on the toast before putting on the cheese; place the little plates in a large dripping-pan, without water, set on the top shelf of the hot oven, and when done as above directed, serve each person with the rarebit on the hot plate. Another method is to melt the cheese in a little cup and pour it over the prepared toast. Some add a little butter and milk, stirring it into the melted cheese till smooth, before pouring it over the toast. Others add a little egg, butter, mustard and cayenne. Do not make it until just ready to serve it, as, if it stands and becomes cold, it will be nearly spoiled.

SALADS.

Salads are preparations of uncooked vegetables, of which lettuce and celery are most generally used; many others, however, are frequently used, such as cabbage, potato, water-cress, onions, asparagus, etc. As vegetables when eaten raw are apt to ferment in the stomach, and as they have very little stimulative power on that organ, they are usually dressed with some condiments, such as pepper, vinegar, salt, mustard and oil. Medical men disagree about the use of these, especially about the oil, some condemning and others recommending it.

The vegetables used in salads should be very carefully cleaned, using ice-cold water to wash them in, and they should be afterwards carefully dried in a towel. Do not break the leaves if you can help it, as that will make them wilt quickly. Putting lettuce, cabbage, celery, etc., into ice-cold water for 2 or 3 hours will make them crisp. Vegetable salads are best eaten at once after they are made, but chicken salad will keep a number of days in cold weather. As a knife when used on a vegetable salad will blacken it, and impair its crispness, it is better to avoid using one; use a wooden spoon to stir a salad, and stir no more than necessary. The freshest olive salad oil is the best to use. Cotton-seed oil is often sold as olive oil, which is a fraud, but if sold at a fair price under its true name, its use is unobjectionable, as it is a nutritious vegetable oil. Melted butter is used instead of oil by some people, who say they like it better. While melted butter may do for family use, oil is the only thing for "state occasions." Arrange a salad on a platter or in an earthen salad bowl; never put it in glass, as it looks disagreeably smeary when you begin to dish it out.

As lettuce is necessary to so many salads, a word may be said about the proper way to prepare it. It is quite apt to be infested with insects which penetrate even to the inner leaves, and therefore each leaf must be carefully washed and examined. Let it stand in very cold water an hour or longer, shake in a wire basket or coarse towel to free it from water, and put in the ice-box until serving time. An easier and quicker way than cutting lettuce for salad is to lay 6 or 8 leaves together in the hand and twist and tear them apart; it is better to tear than cut it.

There is a common idea that salads are difficult to make and are principally adapted for the wealthy, or for special occasions. This is a mistake, as they can be made from "left-over" vegetables, and so are economical, and they are easily prepared when one knows how. The common people among the French use them almost daily, and to advantage. The vegetables used should be drained or dried thoroughly from the water, or the dressing when applied will be watery, and spoil the salad. Do not prepare plain salads until wanted at the table; if prepared long beforehand, the lettuce withers, and the dressing becomes watery.

There is an admirable Spanish proverb about dressing salads. It says it requires 4 persons to mix a salad; a spendthrift to throw in the oil, a miser to drop in the vinegar, a lawyer to add the seasoning, and a madman to stir it together.

To fringe Celery.—A simple and convenient way to fringe celery stalks, is to take a cork, put many large needles in the end, and then cut the celery into pieces about 2 inches long, and draw about half of each strip through the needles a few times. When well shredded, put away to become crisp in a cold place. Thus prepared it makes a good garnish for salads, meats, etc.

To marinate a salad, is to let it stand for a time to season, sprinkled with a French dressing.

Although salads usually contain no flesh forming or heat giving material, they are valuable because they introduce into the system large quantities of saline matter, which by the common method of cooking is generally removed from vegetables. For this reason they are of much value to the poorer inhabitants of our towns and cities. They should be cleaned very carefully so that no parasitic animals remain in them. The vegetables are best used when freshly cut, although some of their freshness may be regained if the stalks are freshly cut and placed under water. The salad dressing should not be added until the last moment. The French and Italians seem to best appreciate the value of salads.

SALAD DRESSING.

1 or 2 eggs beaten well. $\frac{1}{2}$ cup sugar (scant). $\frac{1}{2}$ cup vinegar.
 $\frac{1}{4}$ cup cold water (if vinegar is sharp). Small piece of butter. Salt; red-pepper (to taste).
 Stir all together and bring to a boil. When cool, add $\frac{1}{2}$ cup of sweet cream, or creamy milk.

Salad Dressing, No. 2.—Rub to a paste the yolks of 2 hard-boiled eggs. Add 1 teaspoon each of mustard, salt and sugar, with $\frac{1}{2}$ a teaspoon of pepper, drop in about 2 tablespoons of salad oil or sweet cream, and add 4 tablespoons of lemon juice. This is a nice dressing for canned salmon also.

Boiled Dressing.—Heat 1 cup fresh cream nearly to boiling point; stir in 1 tablespoon sifted flour previously wet with cold milk, and boil 2 minutes, stirring all the time; add 2 tablespoons of sugar and take from the stove. When half cold, beat in whites of 2 eggs, beaten stiff; when quite cold, beat in 2 tablespoons of salad oil, 1 teaspoon each of salt and made mustard, and $\frac{1}{2}$ teaspoon pepper. If the salad is ready, add 3 tablespoons of vinegar, and spread it on.

Cream Dressing.—Rub the yolks of 2 hard-boiled eggs fine with a spoon, stir in a tablespoon of melted butter, $\frac{1}{2}$ teacup of thick, sweet cream, a saltspoon of salt, a dust of cayenne, and vinegar enough to reduce all to a smooth, creamy state. Add a little mustard also, if liked, and pour it upon lettuce or other salad when ready for serving.

French Salad Dressing.—Mix 1 teaspoon pepper and 1 teaspoon salt; then mix in 3 tablespoons salad oil, and 1 tablespoon vinegar; mix all well and pour over the salad. A teaspoon of finely scraped onion or $\frac{1}{4}$ teaspoon of onion juice can be added, if liked. Some people add also 1 teaspoon of made mustard. Lemon juice or tarragon vinegar can be used instead of the vinegar, if preferred.

Mayonnaise Dressing.—Break the yolks of 2 raw eggs in a soup plate, beat smooth with a silver fork, and add oil, a few drops at a time, until it begins to thicken, when it can be added in larger quantities; but the stirring must be kept up constantly, and with a rapid motion. When it grows thick, add a few drops of vinegar, beat smooth again, and then add 1 teaspoon of salt, a level saltspoon of mustard, and a dust of cayenne. The vinegar should be added a little at a time until 2 tablespoons have been used. The amount of oil depends on the quantity of dressing required, but a scant cupful will be an abundance for an ordinary salad. Should the mayonnaise curdle, or crack, as it is called, take another egg, add oil in small quantities until it thickens, and then stir in the curdled mixture, which will soon grow smooth and velvety in appearance. Take special pains in hot weather to have both ingredients and utensils ice cold. The mayonnaise can be colored a bright red with lobster coral, or green with spinach green or chopped parsley.

Swiss Dressing.—Put 2 ounces of cheese in a mortar, pound it well, add 1 tablespoon vinegar, a small quantity of salt and pepper, and very gradually dilute it with salad oil.

SALADS.

String Bean Salad.—String young, green string beans, and cook till tender in salted water; then drain, cover with cold water, let stand till cold, drain and dry. Serve with or without lettuce, and use a French dressing. Add a little onion juice, if liked.

Beef Salad.—Take the crisp, small center leaves of 2 heads of cabbage lettuce; add $\frac{1}{2}$ lb. cold boiled, fresh beef, cut in small pieces. Add or not, as preferred, a tablespoon of chopped sweet Spanish peppers. Serve with a plain salad dress-

ing. *Lamb salad* can be made the same way, by using instead of the beef $\frac{3}{4}$ lb. cold roast lamb, cut in small pieces.

Cabbage Salad.—Chop a cabbage, and add a French, mayonnaise, or boiled dressing.

Cold Slaw.—Take $\frac{3}{8}$ cup vinegar, 2 tablespoons sugar, 1 teaspoon salt, $\frac{1}{2}$ teaspoon mixed mustard, butter size of small egg; mix, stir until it boils, and when cold pour it over chopped or shaved cabbage. Very nice. (The term "cold-slaw" is derived from the Dutch *Kohl-slaw*, meaning simply cabbage salad.)

Cream Dressing for Cold Slaw.—Take 2 tablespoons whipped sweet cream, 2 tablespoons sugar, 4 tablespoons vinegar. Beat well, and pour over cabbage previously cut very fine, and seasoned with salt.

Cream Slaw.—Chop a head of cabbage fine and sprinkle on a little salt; let it stand while you make the cream. Mix well together, and cook slowly until quite smooth and creamy, 1 tablespoon flour, 1 egg, 1 tablespoon butter, 1 tablespoon sugar, $\frac{1}{2}$ teacup vinegar, $\frac{1}{2}$ teacup sweet milk or cream; when done, pour over the cabbage. After you put it in the dish, sprinkle with pepper. Excellent. If kept in a cool place will be nice for 1 or 2 days.

Hot Slaw.—Chop a head of cabbage and put into the kettle, with a tablespoon of lard (or meat fryings) in the bottom, with enough hot water to keep it from boiling dry; add a little salt and pepper. When the cabbage is boiled tender, beat 1 egg in a teacup $\frac{1}{2}$ full of vinegar, and then fill the cup with cream (sour cream will do as well as sweet); pour it over the hot cabbage, let stand 5 minutes, and serve. Will cook in 1 hour.

Celery Salad.—Wash and wipe $\frac{1}{2}$ dozen heads of celery. Cut with shears in a salad-bowl. Mix the yolk of 1 egg, 1 teaspoon of mustard, a little salt and pepper and the juice of 2 lemons with 2 tablespoons of water. Stir well together, drop over it 3 ounces of salad oil, then add a spoon of hot water, and pour over the celery.

CHICORY and ENDIVE are used also for salads like celery. Endive is a native of China and Japan. It resembles sea-kale in flavor, being rather bitter, and it is used for salads and soups. It is not so tender as lettuce, but it makes an excellent winter salad.

ESCAROLE and MONK'S-BEARD (*Barbe de Capucin*) belong to the same family as the endive. They can be made into salads alone, or mixed with sorrel, lettuce, etc. They make good winter salads, and also excellent salads to serve with game.

Chicken Salad.—Take the meat of 2 large boiled chickens, free it from skin and fat and cut in dice; add an equal quantity of celery cut in dice, 3 olives, chopped, 2 teaspoons capers; make a dressing of 6 spoons salad oil, 2 tablespoons vinegar, 2 teaspoons salt, and a dash of red pepper; pour it over the salad and let stand several hours in the ice chest. Then arrange it on a platter in a mound, pour on a mayonnaise dressing, and garnish with lettuce, olives, beets and carrots cut in fancy forms. The chicken should be cooked the day before using so as to be thoroughly cold. (See "Veal Salad.")

Chicken Salad, No. 2.—Take the meat from 1 cold boiled chicken, and 2 teacups celery; do not chop either, but cut each into dice, and mix. Put 2 teacups cream into a sauce-pan and boil; stir in 4 eggs, well beaten, until it becomes like thick corn-starch; put the sauce-pan into cold water and stir in $\frac{1}{2}$ bottle Durkee's salad dressing, stirring to keep it from curdling; add vinegar to taste. When cold, pour over the chicken and celery. Excellent.

Crab Salad.—Take the meat of boiled crab, chop it, and mix a mayonnaise sauce with it. Clean the shells, put in the mixture, and garnish with parsley or cresses and sliced lemon.

Cucumber Salad.—(1) Peel and slice fresh cucumbers, and let them stand in a bowl of water 2 hours, changing the water twice. When it is time to serve dinner, drain and chop the cucumbers coarsely with a knife, and add 1 or 2 new onions, cut finely. Put in a salad dish, and send to the table without dressing. Serve in small salad-plates and send it around the table with salad oil vinegar, salt and pepper. (2) Mix sliced cucumbers and new onions, sliced, and cover with a French dressing.

Egg Salad.—Put into a salad bowl the leaves of a head of lettuce; slice 4 hard-boiled eggs and add; mince 12 capers and sprinkle over the eggs, and cover with either a French or mayonnaise dressing.

Fish Salad.—Take any cooked fish which has become cold, remove skin and bones, and flake it or cut in pieces, and spread it on lettuce leaves. Cover with mayonnaise dressing. Finely picked sardines may be added if desired, and also some hard-boiled egg. Salmon is the favorite fish for salads, but almost any other will do. The fish can be mixed with cabbage or celery instead of lettuce, if more convenient.

Ham Salad.—Cut cold boiled ham into dice, lean and fat together; mix with celery or lettuce and cover with a boiled dressing.

Lemon Salad.—Make as directed for orange salad, but add a little lettuce, and sprigs of mint or tarragon, if you have it.

Lettuce Salad.—Lettuce makes the foundation for many excellent salads. Prepare it as previously directed, and serve it crisp and cold. It can be served (1) alone with French or boiled dressing, or (2) mixed with celery cut into dice, and with a French dressing, which makes an excellent salad. It goes well (3) mixed with sorrel, with a French dressing, or (4) with chives, using the same dressing and garnishing with olives, or (5) with pepper-grass and water-cresses mixed, using a mayonnaise dressing, and garnishing with radishes. A few nasturtium blossoms for a garnish produce a brilliant effect. (6) A bed of lettuce covered with sliced cucumbers, and a layer of sliced tomatoes on top, covered with a mayonnaise or French dressing, makes a good salad.

LAMB'S LETTUCE (also called *Corn-salad* or *Fetticus*) is a small annual plant, often used for salads. It comes early in the spring, and although inferior to lettuce, it makes a fairly good substitute for it, and a good spring salad.

Lobster Salad.—It is better to use large lobsters, as there is less waste than with small ones. Cut up the meat, and pour on it oil and vinegar in the proportion of 1 tablespoon of oil to 3 of vinegar, with pepper and salt, and let it stand in a cold place for 1 hour at least; this is called "*marinating*" it, and serves to season it. At serving time, drain it from the oil and vinegar not absorbed, put it on a bed of lettuce, and cover with a mayonnaise dressing. Garnish it with the claws of the lobster. It can be made without going through the marinating process, but we think that an improvement.

Melon Salad.—Put either watermelons or musk melons on ice till very cold; then take out the seeds and remove the rind, using only the fully ripe part, cut into pieces, put into a bowl with bits of ice, and pour over either a mayonnaise or French dressing.

Nut Salad.—Mix together 1 qt. of shredded lettuce, and 2 cups chopped nuts; dress with a little mayonnaise dressing, arrange in fresh lettuce, and garnish with more mayonnaise.

Orange Salad.—Peel the oranges, slice them crossways, take out the seeds, and cover with a dressing made in the proportion of 3 spoons of salad oil to 1 spoon

lemon juice, and add a dash of cayenne; flavor, if desired, with a little grated orange rind. Excellent with cold game or roast pork.

Oyster Salad.—Use the small oysters, and just let them come to boiling in their own liquor; skim and drain in a colander, then on a cloth. For a pint of oysters, add 2 tablespoons of vinegar, 2 of salad oil, with salt and pepper to taste; mix well, and set it in the ice-chest. Cut finely a pint of nice white celery, and mix with the oysters just before serving, arrange it on a salad dish, garnish with the white leaves of the celery, and pour over it a pint of mayonnaise dressing.

Potato Salad.—Cut cold boiled potatoes in dice and "*marinate*" in a French dressing; chill thoroughly, then arrange in a tasteful manner, and garnish with parsley, chopped pickled beets, and hard-boiled eggs, sliced. For a quart of cut potatoes, a teaspoon of salt, a saltspoon of pepper, 3 tablespoons of oil, and 3 of vinegar, are required for the dressing, and 4 hard-boiled eggs. This is a tasteful dish of white, yellow, red, and green.

Potato Salad with Eggs.—Cut cold potatoes finely, and mix with French salad dressing; place on a garnished platter, and cover with slices of hard-boiled eggs. Good for a luncheon or supper dish in hot weather.

Salmon Salad.—Put the meat of 1 can of salmon in a colander to drain; then carefully pick out any bones, skin, or unsightly bits. When well drained, put it in a bowl in the ice-chest until time to serve; make a mayonnaise dressing and keep that by itself in the ice-chest. Have ready the hearts of nice head-lettuce leaves in ice-cold water; just before serving put a heavy border of lettuce around the salad dish, cut the salmon finely, and place in the center; then pour the mayonnaise over the fish. Serve a few of the lettuce leaves with the salad to each person. The water from the lettuce must be thoroughly shaken off, or it will dilute the mayonnaise. Another way is to put 3 stalks of sliced celery into a salad bowl, add $\frac{1}{2}$ lb. of canned salmon, arranging neatly. Use mayonnaise dressing, garnish and serve.

Sardine Salad.—Drain the oil from a small box of sardines, laying them afterward on brown paper so that no trace may remain of the oil in which they are preserved. Remove the skin and bones, and pour a little lemon juice over them. Lay them on a bed of lettuce, pour a plain French dressing over them, and garnish with 2 hard-boiled eggs which have been chopped fine.

Tongue Salad.—Chop a nicely cooked tongue fine, then add chopped celery and lettuce and the whites of eggs. Use a mayonnaise dressing.

Sweet Potato Salad.—Boil 3 large sweet potatoes, and when thoroughly cold cut them into half-inch squares; cut into very small pieces 2 stalks of celery; mix with a seasoning of salt and pepper, and pour over it a French dressing.

Tomato Salad.—(1) Cut ripe tomatoes into slices, remove all the seeds, sprinkle on a French dressing, let them stand 2 hours on ice, and they will be ready to serve. (2) Another way is to peel the tomatoes, cut them in two, put a spoonful of mayonnaise dressing on each half, and serve.

Veal Salad.—Boil the veal until it is tender; let it become quite cold, cut it quite fine, and use as much chopped celery as veal. Mix, after chopping, and just before serving pour over it a rich mayonnaise dressing. (When a large quantity of chicken salad has to be made for a party, half the meat may be of veal, boiled in the chicken broth after that is done, and no one will ever know the difference.)

Vegetable Salads.—Almost any cold vegetable may be used, and this is an

excellent way to utilize the remnants of vegetables left from dinner the day before. Take any one alone, or several vegetables mixed, and arrange them tastefully (with lettuce if you have it, without if not); cover with a French or mayonnaise dressing. Many varieties may thus be made.

Walnut Salad.—Get the kernels as nearly whole as possible, and let them soak 2 hours in lemon juice; pick them out without draining and serve on water-cress or lettuce, with French dressing.

Water-cress Salad.—Pick over the leaves and remove bruised or wilted ones; if long tear them into 2-inch lengths; if short it is not necessary. Cold boiled beets, cut in dice, or chopped onion may be added. Use a French dressing. Water-cress makes one of the most wholesome of salads, and is remarkable for the amount of mineral matter found in it. The *garden cress* also makes an excellent salad. Cresses can be used alone, or mixed with cucumbers, tomatoes or onions for salads.

Fruit Salad.—Cut bananas, oranges and pineapple in small pieces; arrange them in alternate layers in a glass dish, with powdered sugar and grated cocoanut between each layer. It makes a nice dessert with white cake.

Various other fruits may also be combined for fruit salads, as strawberries, raspberries, currants, peaches, etc., and thus a variety of pleasing combinations and flavors can be produced. Exercise your ingenuity in devising new combinations.

VEGETABLES:

An abundance and variety of vegetables are essential to perfect health. They furnish the mineral matters, alkalies and acids in which meat is deficient, and most of the carbohydrates needed by the system. The following table will show the percentage of the different food elements in various vegetables. For an explanation of the terms "albumenoids," "carbohydrates," "potential energy" and "Calories," see our article elsewhere on the composition of foods.

TABLE SHOWING THE PERCENTAGE OF FOOD ELEMENTS IN DIFFERENT VEGETABLES.

	Water. %	Albu- menoids. %	Carbohy- drates. %	Fats. %	Mineral Matters. %	Potential Energy in 1 lb. Calories.
Asparagus.....	94.0	1.8	3.3	0.2	0.7	105
Beans, Lima, green.....	65.5	7.1	22.0	0.7	1.7	570
Beans, string, green.....	57.2	2.2	9.5	0.4	0.7	235
Beans, dried.....	12.6	23.1	59.2	2.0	3.1	1615
Beets.....	88.5	1.5	8.8	0.1	1.1	195
Cabbage.....	90.5	2.4	5.3	0.4	1.4	155
Carrots.....	88.6	1.1	8.9	0.4	1.0	205
Cauliflower.....	90.3	1.6	5.0	0.8	0.8	155
Cucumber.....	98.0	0.8	2.5	0.2	0.5	70
Corn, sweet, green.....	81.2	2.8	14.2	1.1	0.7	360
Corn, sweet, green, can'd	71.8	3.0	22.5	1.3	1.4	530
Egg Plant.....	92.9	1.2	5.1	0.3	0.5	130
Lettuce.....	93.1	1.6	3.7	0.5	1.1	120
Onions.....	87.6	1.4	10.1	0.3	0.6	225
Okra.....	87.4	2.0	9.5	0.4	0.7	230
Peas, green.....	78.1	4.4	16.1	0.5	0.9	400
Peas, dried.....	14.3	22.4	58.3	2.0	3.0	1580
Potatoes.....	78.9	2.1	17.9	0.1	1.0	375
Potatoes, sweet.....	71.1	1.5	26.0	0.4	1.0	520
Pumpkin.....	93.4	0.9	4.9	0.1	0.7	110
Rice.....	12.4	7.4	79.4	0.4	0.4	1630
Spinach.....	92.4	2.1	3.1	0.5	1.9	120
Squash.....	88.1	0.9	10.1	0.2	0.7	215
Turnips.....	89.4	1.2	8.2	0.2	1.0	185
Tomatoes.....	96.0	0.8	2.5	0.4	0.3	80

The large percentage of water in all the vegetables will be noticed, and also the large amount of albumenoids in the dried beans and peas. One great drawback to the use of vegetables is that the percentage of their nutrients which they yield to us, as the stomach attempts to digest them, is from 25 to 50 % less than that yielded by animal foods. See what we say elsewhere about "Cellulose." We digest, however, a rather larger percentage of their starch than of their albumenoid principles. The lack of fat in vegetables should be supplied by using butter, or some other form of fat, with them all. A moment's thought will show our readers that in arranging a dietary the object is to supply the lack of any element in one article of food, by using with it some other food containing the missing element. Although the foods in every-day use thus supplement each other, many people do not think of the principle involved. Why does butter go with bread? Because the gluten of the bread furnishes the albumenoid element needed by the body, while the starch supplies the carbohydrates, but bread itself lacks fat, and the butter used supplies that. So meat and potatoes go well together, the lean meat supplying the albumenoids, the potato the carbohydrates, and the fat or butter furnishes the fats, the 3 together thus supplying the body with the 3 great food elements which it needs.

Vegetables when taken as food are valuable not only for the direct nourishment which they afford to the system, but also because they impart to the blood certain constituents which are necessary to maintain its highest purity. This has been amply proved by the appearance of such blood diseases as scurvy, etc., in circumstances where vegetable food

was not procurable for any length of time. Few people rightly estimate the value of vegetables to the system. One of the chief benefits derived from eating them comes from the salts which they contain, while they also introduce into the system some water necessary for digestion and assimilation, and afford the benefit of variety in food. It is much to be regretted that by the method of cooking vegetables which commonly prevails in this country the greater part of their salts are dissolved out by the water in which they are cooked, and this water is thrown away, only the vegetable itself being eaten. There seems to be a common impression that the water in which many vegetables are boiled is poisonous, but this is a most erroneous idea.

In this connection we quote from Mr. Mattieu Williams: "I must add a few words in advocacy of further adoption in this country of the French practice of using as *potage* (for soups, etc.), the water in which vegetables generally (excepting potatoes) have been boiled. When we boil cabbages, turnips, carrots, etc., we dissolve out of them a very large proportion of their saline constituents; salts which are absolutely necessary for the maintenance of health; salts without which we become victims of gout, rheumatism, lumbago, neuralgia, gravel, and all the ills that human flesh with a lithic acid diathesis is heir to; i. e., about the most painful series of all its inheritances." To which we may add the recommendation to save vegetable broth, and utilize it for soup, sauce, etc. A rich soup can be made from the water in which potatoes have been boiled (if *without* their skins) by mashing 2 or 3, and adding a little thickening and seasoning and a little butter. The juices of other vegetables like cabbage, turnips, celery, and most others, are palatable and work well into soups. Onions are an exception; they should be used sparingly as flavoring for those who like them, but a dish of boiled onions served with the water they are boiled in, causes distressing flatulence often. They can be parboiled, the water changed once, and then eaten by most people without unpleasant digestive disorders.

All green vegetables are best when they are grown quickly, in which case they have less woody fibre. All green vegetables need to be eaten fresh. When fresh, vegetables will snap crisply. Peas picked in the early morning can be cooked the same day in about $\frac{1}{2}$ the time needed if they are kept 1 or 2 days longer, and their flavor is much better. Ears of green corn that are just filled will, if plunged into boiling water as soon as gathered, cook in 10 minutes, or perhaps less, and if kept 1 or 2 days twice as much time will be needed, and they will not then be as tender and fine flavored.

Very few vegetables are roasted; they are generally boiled. Those which contain saccharine matter, such as carrots, beetroot, parsnips, etc., are best cooked by steam, as boiling water dissolves out a large quantity of their nutritious ingredients. Vegetables, however, which contain much starch, as a rule, are best boiled, as by boiling the granules of the starch are ruptured and partially dissolved, and any volatile oils which may be present are expelled, as well as the confined air. We elsewhere explain how much cooking adds to the digestibility of starch.

All vegetables, with a few exceptions, should be put first into *boiling* water which contains salt in the proportion of an even teaspoon to every 2 qts. of water; the exceptions are old, dry, and partly dried vegetables, such as peas, beans of all kinds, and wilted vegetables; the latter had better be thrown away if they do not become crisp after standing a few hours in cold water.

How to Boil Vegetables.—While in boiling meat, the great point is not to have the water boil, but to have it simmer instead, the great point in boiling vegetables is *not to let the boiling stop*. Even if the boiling water could be raised above 212°, the vegetable would be rather improved than injured thereby. Have plenty of water, especially for greens of all kinds. Choose a sufficiently large kettle, and get it $\frac{3}{4}$ full of boiling water in ample time; then the water will come to a boil more quickly when the vegetables are thrown in, for when the cold vegetables are first put in they will check the boiling. The quicker vegetables boil the greener they will be, and remember that freshly-gathered vegetables do not require as long boiling as those which have been long kept. Experience will best tell you when the vegetables are sufficiently cooked. The rule should be to cook them until they are soft and tender, *but no longer*, because the starch cells having then burst, they will begin to absorb water, and the vegetable will become soggy, and loose flavor as well. *If not sufficiently done they are indigestible, and if left too long they become soggy.* As soon as they are done, take them out and serve them.

Remember then, that there is a right and a wrong way to boil vegetables. The essentials of the right way are: (1) to put them into *boiling* water, which is slightly salted; (2) have *plenty of it*; (3) do *not* let the boiling *stop* until they are done; (4) take them out *as soon as they are done*. The wrong way is the opposite of this—it is to use little water, let it *simmer* without really boiling, and to leave the vegetables in too long. If you will try the 2 methods once, the

difference in the results and the superiority of the first method will be apparent. Asparagus, cauliflower and peas, should boil, but the water should not bubble, as that tosses them around and breaks them.

Overcoming the Odor of Boiling.—Various plans have been devised to mitigate the unpleasant odor caused by many vegetables while cooking. (1) Wrap a piece of bread about the size of a lemon in a cloth, and drop it in the kettle at the start; it will absorb the odor. (2) A lump of charcoal treated in the same way will absorb the odor. (3) Fold a towel to 3 or 4 thicknesses and lay over the kettle. (4) A piece of red pepper, $\frac{1}{2}$ inch in diameter, dropped in at the start, is used by some cooks. The essential oils are dissolved out of the vegetable while cooking, and from this oil the odor comes. If the water is changed once or twice while the vegetable is cooking, it will be an advantage, but be sure the fresh water is boiling hot when put in. Changing the water while cooking also gets rid of some unwholesome sulphuric gases given out by cabbage and onion.

Effect of Different Waters.—Many cooks do not understand the different effects produced by hard and soft water; peas and beans especially should be cooked in soft water if possible to obtain it (see "Rain Water Cisterns") as hard water containing lime and gypsum harden vegetable casein, making them less digestible. With some vegetables, soft water extracts most of their flavor and salts, but the addition of a little salt partially remedies this. Great care should be

The chief benefit derived from boiling vegetables is that boiling bursts the nearly indigestible cellulose sheaths which cover the starch granules (like the shell on an egg); this lets out the starch, which is then readily attacked by the digestive fluids, and turned into sugar.

Hints.—Be very careful to wash vegetables thoroughly, and examine them for insects. Spinach should be allowed to float on water in a deep vessel, and then lifted out with the hand and placed in deep water in another vessel, in order to free it from sand. Any vegetables which are peeled should be thrown into cold water until wanted for cooking, to prevent their turning color: When possible, it is much better to boil the different vegetables by themselves; also, when such vegetables as cabbage, carrots, beets, onions, potatoes, parsnips or turnips are boiled with meat, the flavor of both the meat and the vegetable is injured. Not only this, but it is also better to store vegetables separately. Certainly the strong scented vegetables, like onions, leeks and cabbage, should be kept apart, for delicate vegetables will be spoiled in a short time, if near the strongly scented ones.

Vegetables are much nicer boiled in slightly salted water, and then, when seasoned with butter, they are usually salted sufficiently for most persons; the water being salted reaches a higher temperature before boiling, and secures better cookery of the vegetables. It is important that all vegetables should go to the table as hot as possible, and 2 or 3 two-qt. tin basins are good to keep them in until ready to put them on the table; or they may, if more convenient, be kept in the kettles they were boiled in. Have the vegetable dishes (that will not bear standing on the back of the range to keep hot) standing ready on a table with hot water in them. For common use, heavy white nappies are good for dishing up vegetables, as they will bear standing on the back of the range, or in the edge of the oven, with the door open.

In dishing up vegetables, drain them thoroughly from the water: Vegetables which contain much sugar, like beets, turnips, squash, pumpkins, etc., especially if they are not of the best quality, are improved by the addition of a little sugar—a fact overlooked by many cooks. Boiling deprives them of part of their sweetness, so add a little. Vegetables, like lettuce and cabbage, which contain potash salts, are best eaten with a mild acid, like vinegar.

When, by reason of long keeping, the freshness of salads, greens, roots, etc., has been somewhat lost, it may be restored by putting the *stems* and *roots* in cold fresh water for 1 or 2 hours before dressing them, but the *leaves* should not be immersed, as that injures them.

In winter, or after long keeping, tuberous vegetables like carrots, turnips, potatoes, etc., become wilted, and their flavor impaired; after peeling and slicing, let them stand in cold water for several hours before cooking them, and it will restore their freshness.

To shell beans easily, pour upon the pods a quantity of scalding water, and the beans will slip out very readily.

In boiling suet dumplings, to be served with meat, like a vegetable, put a plate at the bottom of the kettle, as, when first put in, they will sink, and sometimes stick at the bottom of the kettle and burn. When they swell with boiling, they get light and float. Puddings are always boiled in a cloth.

ARTICHOKEs.

Jerusalem Artichokes.—Wash the roots thoroughly, scrape off the skin, cut off 1 end flat; and leave the other pointed. Boil until soft, in water containing a little salt, and a few drops of vinegar. Cook until soft, but do not leave longer, or they will become hard again. Take them up carefully, put them in the vegetable dish, and pour over them scalded cream, or serve with a white sauce. They can also be chopped coarsely and served as a salad, with a salad dressing.

Globe Artichokes.—Cut off the outside leaves, trim away the lower ones, and boil in salted water containing a few drops of vinegar; boil about 1 hour, drain, take out the choke, and serve with drawn butter poured over them.

French Artichokes, Fried.—Wash and trim the artichoke heads, and cut them into thin slices; place in cold water with a little salt and vinegar added; this should be done 15 or 20 minutes before frying them. Drain, and wipe them dry; make a batter with 3 eggs, 2 tablespoons of salad oil, and 2 tablespoons of flour, seasoned with salt and pepper; mix the sliced artichoke thoroughly with the batter, then fry in hot fat, being careful that the artichoke is cooked through as well as browned.

Canned Artichokes should be placed in ice-cold water for 15 minutes before serving them. The dressing to accompany them is made by mixing 2 large spoons of vinegar with 1 of chopped parsley, a little salt and pepper, and 8 spoons of good salad oil.

ARTICHOKEs.—There are two vegetables called by this name, both belonging to the order *Compositæ*. The *Jerusalem artichoke*, (*Helianthus tuberosus*) is said to be a native of Brazil, but has long been naturalized in this country. Its name is a corruption of the Italian *girasole* (sunflower). The flowers are like the common sunflower, only smaller, and the roots, something like potatoes in shape and size, are cooked as a vegetable, and sometimes used for pickles. This plant is perennial, and when once planted in a rich soil can be dug early every spring; the small roots left in the ground will keep the crop growing year after year.

The *globe*, or *French artichoke*, so called (*Cynara Scolymus*) is a native of Asia, but is naturalized in this country. The flowerbuds and upper part of the stalks are used for a vegetable at table, and are cultivated from suckers placed in rows 3 feet apart. The *Cardoon* (*Cynara Cardunculus*) is a native of southern Europe, and much resembles the artichoke. It has purple flowers, and is grown, blanched, and eaten like celery. Artichokes contain 80% of water; 2% of albumenoids; 16% carbohydrates; 0.5% fats; 1% mineral matters.

ASPARAGUS.

A la Francaise.—Wash and boil the asparagus until tender; drain them, cut off the heads and about 2 inches of the white part of the stalks; mince them with a knife, and mix them with a small onion cut finely; add the yolk of an egg well beaten, with salt and pepper to taste; make it hot in a stew-pan, and dish it up on a platter, with nicely browned, buttered toast.

Buttered.—Pour boiling water over a bunch of asparagus, then untie the bundle and lay it in a large frying-pan; cover with boiling water, sprinkle on a very little salt, cover, and cook 20 or 30 minutes—do not cook until the heads break off. When done, pour off the water, lift the pieces carefully by the hard end of the stem, lay them in a flat vegetable dish, place bits of butter on the asparagus, set in the oven until the butter is melted, and send to the table.

Creamed.—Wash and cut asparagus in inch pieces until the hard part of the stem is reached, stew 15 minutes in slightly salted water; then drain in a colander. Make a rich cream sauce and pour over. Or use drawn butter.

Steamed.—There is another method of boiling asparagus, rarely practised by

American cooks. It is to take the stouter varieties, cut them of exactly equal lengths, and stand them on end in a deep sauce-pan, with the heads projecting about 2 inches out of the water; then cook 30 to 40 minutes. By this plan at least $\frac{1}{3}$ more of the stalk will be rendered delicious, while the head will be properly cooked by the steam. Then season, and serve. This is especially adapted to the "giant" and stouter varieties.

Asparagus is a native of Europe, and is sometimes vulgarly called *sparrowgrass*. It is wholesome, but not very nutritious, and has been used in medicine, being a diuretic, and aperient. The cellular tissue contains a substance similar to sago. Its juice is composed of a peculiar crystallizable principle called asparagin, albumen, mannite, malic acid and some salts.

To avoid getting the woody white part, which is not made tender by boiling, asparagus when gathered can be snapped off, instead of cutting it.

BEANS.

Shelled.—Shell, wash and boil until tender, adding salt after they have boiled about 10 minutes. If possible, always cook them in *soft* water. They should boil at least an hour. Season with salt and butter. Add hot cream to Lima or any white beans.

French Beans.—Soak them over night, then parboil them until the skins loosen, change the water, and when they are cool, rub off all the skins; put them back in the pot with fresh water to just cover them, and boil until they begin to break in pieces; then drain, sprinkle a little salt and pepper over them, and bits of butter. Set the dish in the oven to get hot; then send to the table.

String Beans.—The bean pods should be tender enough to snap off short when bent. Pull off the string on each side, and break in pieces $\frac{3}{4}$ inch long. Boil in slightly salted water. A few thin slices of salt pork can be put in or not, as desired. It takes a full hour to cook them well, and may take 3 with some varieties. Drain, and season with butter and pepper, or butter and cream, and a little more salt if needed. It is a good plan to change the water once while they are boiling, as that gets rid of part of an unwholesome gas which they yield in boiling.

Delicious Baked Beans.—Take about 3 pints of the small white beans, wash, and then soak them over night. Do not boil, but put at once in the baking dish and add a piece of salt pork that has been scalded, or if beef is preferred, use a piece of the brisket. Add salt, and a little pepper, and 2 or 3 tablespoons of molasses. Place in the oven, with plenty of water to cover, early in the morning, and let cook all day. Do not allow them to cook dry. A teaspoon of mustard is sometimes added with the molasses; it adds to both the flavor and wholesomeness of the beans when done.

New England Baked Beans.—Pick over and wash, 1 pint of beans, put them into 2 quarts of cold water and let them stand over night. The following morning drain off all the water, and put them into an earthen bean pot—which comes for this purpose—with 2 tablespoons of molasses, a teaspoon of salt, a little pepper, half a pound salt pork—quite fat—and fill the pot up with boiling water and bake from 8 to 10 hours in good steady oven; keep the pot well filled with water, till 2 hours before serving, and then allow it to simmer away one-half at least. You will find them delicious if directions are strictly followed.

Beans are supposed to be a native of the East, particularly of Egypt, but have been known in Europe from time immemorial, having, in all probability, been introduced by the Romans. The common dwarf kidney bean, erroneously called the French bean, is a tender annual, a native of India, and was introduced into Europe in 1597, or perhaps earlier. All varieties of the bean are wholesome and nutritious, but are not suitable to persons with delicate stomachs or of sedentary habits. They are best eaten with fatty or starchy foods, like bacon or rice. If bean flour was to be had as wheat flour is, a much larger proportion of the nutrient parts of beans could be assimilated, experiment having shown that 91% of

bean flour was digested, and only 40% of the nutritive parts were assimilated as ordinarily prepared. If beans are well cooked and passed through a sieve, it will divest them of their indigestible skins, or cellulose.

THE PULSES, which include lentils, beans and peas, are among the most nourishing of foods. Owing to the large amount of nitrogenous matter which they contain, they should be accompanied, when eaten, with articles in which fat and starch abound. The nutritive value of these articles is somewhat deteriorated by the fact that they are rather difficult of digestion. They sometimes occasion flatulence, and have a stimulating, heating effect on the system. They should never be eaten without being thoroughly cooked. Green peas are more digestible but less nourishing than dried, which require prolonged boiling to make them digestible. Dried peas should always be boiled in soft water, for the longer they are boiled in hard water, the harder they become. A little bicarbonate of soda, (cooking soda) may be added to the water in which dried peas and beans are cooked, as this assists in softening the legumen. It may also be added to stale green peas, but it impairs the color of fresh, tender, green peas and beans, and is not needed for softening purposes.

BEETS.

Boiled.—These should be washed clean, and the tops and tips cut closely, but do not peel them nor prick the skin, as the juice will then escape and injure both the color and flavor. Cook until tender in boiling water. Young beets will cook in about an hour; fully grown ones take 2 to 4 hours; the very largest are not suitable for the table, as they are apt to be tough and tasteless. When done, put in cold water and rub off the rind; then slice, put in a vegetable dish, and cover with vinegar; or serve with a butter or white sauce. For a "boiled dinner" cook them by themselves; they are peeled after cooking, cut in slices, and served without dressing. They are also cut in fancy pieces and used to garnish various dishes. They are also used for salads mixed with other vegetables.

Creamed Beets.—When boiled in unsalted water until tender, rub off the skins with a wet towel, and serve at once in hot cream sauce, which can be made while they are boiling. (See "Cream Sauce.")

Beet Greens.—Beet greens are boiled whole, the beets with the tops, while they are tender. Put into slightly salted boiling water, and boil for an hour. When the little beets are done, the tops are done also. Sometimes thin slices of salt pork are cooked with them. When done, take up into a colander and drain well, cut through several times with a knife, so that they can be served with a spoon, and send to the table in a vegetable dish. They are usually eaten with vinegar. If no pork is boiled with them, they can be seasoned with a little butter, and a very little vinegar, about a tablespoon to a medium-sized vegetable dish. They can be served hot or cold.

The beet root is a native of the shores of the Mediterranean. It is very wholesome and nutritious, and is chiefly characterized by the large amount of starch, sugar, and alkaline salts which it contains.

BRUSSELS SPROUTS.

Boiled.—Pick off all dead or discolored leaves, and soak in cold salted water 1 hour before cooking; then put them in *boiling* water containing a little salt and soda, the latter to preserve their green color; leave the kettle uncovered, and boil briskly until tender. Drain and send to the table at once, as they cool quickly. Serve with melted butter or maitre d'hotel sauce.

Sautéd.—Take 1 qt. of sprouts, remove loose, hanging leaves, and soak $\frac{1}{2}$ hour in cold water; then wash and boil $\frac{1}{2}$ hour in 2 qts. of water, adding 1 teaspoon of salt, after the first 10 minutes; then drain off all the water, and add 3 tablespoons of butter, 1 teaspoon of sugar, 1 teaspoon of flour, $\frac{1}{4}$ teaspoon of pepper, and 1 teaspoon of salt; shake the pan over the fire 3 or 4 minutes, or until the sprouts are slightly colored. Serve at once in a warm dish.

Brussels Sprouts is a variety of the cabbage, and is so named because the seed was obtained from Belgium in former times. It grows from 3 to 5 feet in height, the stalk terminating in a large, cabbage-like head, and the stem being covered with the sprouts.

CABBAGE.

Baked.—Boil a firm white cabbage for 15 minutes, changing the water once;

drain and set aside until cold; then chop finely, and add 2 beaten eggs, butter the size of an egg, pepper and salt to taste; stir all together and bake in a buttered pudding-dish until brown. This is economical, good and nourishing. It is sometimes covered with bread-crumbs, moistened with white sauce, and then baked.

Boiled.—Cut it in quarters, soak 30 minutes in salted water; then boil rapidly, uncovered, *until tender, but no longer*, in slightly salted water; push it down with a spoon as it rises above the water; it should boil in about 25 to 30 minutes. When done, take it up, drain, put it in a vegetable dish, and put bits of butter over it with a little salt. Remember that the secret of boiling cabbage is to boil it rapidly, uncovered, and in plenty of water, and boil *until tender, but no longer*. If boiled longer it becomes wilted, yellow, and loses flavor. Try cabbage thus cooked and see how much better it is than when cooked in the old way. If the water it is boiled in is not very soft, add to each 4 quarts of water 1 saltspoon of baking soda, but *no more*.

Fried.—Chop cold white cabbage quite fine; stir in some melted butter to taste, pepper and salt, and 4 tablespoons of milk or cream; after it is heated through add 1 or 2 well-beaten eggs, according to quantity of cabbage; then turn the mixture into a well-buttered spider, and fry about 5 minutes, or until a light brown on the under side. Place a hot dish over the pan, which must be reversed when turned out to serve.

Cabbage and Milk.—Cut the cabbage into very fine slices, take out the coarser veins carefully; put it in a tin sauce-pan, over a slow fire, add milk enough to cover entirely, and simmer very slowly 2 hours. Grate some nutmeg over it before serving, and add a good sized lump of butter. Thus cooked its coarseness disappears, and it almost equals cauliflower. Very few people know how good it is thus prepared.

The botanical order, *Cruciferae*, is a most important one, in furnishing various nutritious, and therefore highly nutritious dishes for our use; cabbage, kale, cauliflower, brocoli, Brussels sprouts, turnips, all belong to this order. For salads and relishes we have cresses, pepper-grass, scurvy-grass, wild pepper-root, radishes, horseradish and cardamine. Cabbage contains 90% of water, and is more wholesome than nourishing. Its tendency is to purify the blood, and it is a particularly serviceable in cases of skin disease, but should be avoided by all who are subject to flatulence and diarrhoea. It is long in digesting, and is best fitted for robust and active persons. Cabbage eaten raw as a salad is more wholesome than when cooked. Cabbage and cauliflower contain more gluten than other vegetables, and for that reason they should be eaten with fatty foods. A mild acid, like vinegar, aids their digestion.

A Hint.—The young white leaves of a white-hearted cabbage chopped fine, are a fairly good substitute for lettuce when the latter is scarce.

CARROTS.

Boiled.—Wash, scrape, not pare, cut into strips, barely cover with boiling water, and as soon as they begin to boil put in a little butter; as soon as tender add some minced parsley and serve. They need to boil longer than most vegetables. They are often boiled with corned beef.

Another way is to cut lengthwise, boil until soft and slice thin. Put in sauce-pan with 2 tablespoons of butter and 1 cup of milk. Season with salt, pepper and a little sugar; stew 15 minutes and serve.

Carrots With Cream.—Cut the carrots in thin slices; boil until almost tender in water; then pour the water off and add butter; fry them a little; then add a few spoonfuls of cream; season with salt and pepper and serve very hot. Excellent.

Carrots grow in all parts of the globe. They are one of the most important vegetables used in domestic cookery, and their flavor renders them valuable in soups, stews and sauces, but they are not particularly nourishing as it requires 2 lbs. of carrots to produce 1 oz. of the nitrogenous substance of muscle and flesh. They contain pectine (a gelatinous substance) instead of starch, and hence soups containing them become gelatinous when cold. For 1 part of flesh-formers they contain 10 of heat-givers.

CAULIFLOWER.

Boiled.—Cut the stem where it begins to branch, place it, head down, in cold salted water for an hour; this will take out hidden insects if there are any; rinse it up and down several times. Put in a kettle with enough slightly salted boiling water to cover, and boil till tender. Do not let the water bubble and boil so violently as to make the cauliflower jump about, as that will break it. It is sometimes tied in a muslin bag; if not, skim the water. When done, put it in a colander to drain well, and at the same time keep it hot. Then cut it coarsely with a knife, put it in a vegetable dish, put a few lumps of butter over it, and send to the table. Or instead of the butter pour over either a bechamel, Hollandaise or cream sauce. It is used also for garnishing chicken or sweetbreads, or for salads.

Baked.—Boil as directed above. Then put in a baking-dish, pour over a thick drawn butter sauce, sprinkle with bread crumbs, put in the oven and bake until brown. Sprinkle on grated cheese, also, before baking, if desired.

CAULIFLOWER and BROCOLI are only forms of the wild cabbage in its cultivated state; the white and purple brocoli are only varieties of the cauliflower. Cauliflower has been known since the times of the Greeks and Romans. It is a wholesome, but not particularly nourishing, article of food; it is difficult of digestion, and ought to be avoided by those who have delicate stomachs, but, on the whole, it is less indigestible and richer in flesh-formers than cabbage.

CELERY.

Many people throw away the outside green stalks of celery, not knowing that it makes a very savory dish when stewed. Take all the fine white stalks, wash well and serve; the remainder break into short pieces, pulling off all the stringy outside. Put the pieces in a stew-pan, cover well with boiling water, and boil $\frac{1}{2}$ hour. Make a cream or drawn butter sauce, pour it over the celery, and serve.

Baked.—Take a qt. of veal stock, and, having parboiled a proper amount of the stalks, put them into a baking-dish. Rub together 2 spoonfuls of butter and 2 of flour, smoothly, then beat in the yolks of 3 eggs, and stir these into the veal broth, and pour it over the celery. Lastly, cover the top with finely grated bread crumbs, and then with grated cheese. Bake 10 minutes in a quick oven. This is one of the most delicious forms in which celery can be put upon the table.

Fried.—After cutting it into inch lengths, and boiling till tender in slightly salted water, dip the pieces in fritter batter and fry in smoking hot fat. Garnish with parsley, and serve with tomato sauce. Or sprinkle the pieces with salt and nutmeg; then egg and bread-crumbs and fry the same way; drain on a sieve and serve on a napkin.

Celery grows wild nearly all over Europe, growing chiefly in ditches and marshes near the sea, and when wild is called *Smallage*. Smallage was first cultivated by Italian gardeners and the result of their labors was the production of 2 plants, *Celery* and *Celeriac*. The latter variety (often, also, called *German* or knob celery) is turnip-shaped, and large, and is extensively used by the Germans, who prefer it to the variety we commonly use. In its raw state, it is not suited to persons of weak stomachs, but is more easily digested when cooked. Celery has medicinal properties, and is used as a corrector of bilious conditions, and as a tonic for the nervous system. It contains about 93 per cent. of water, 1 of albumen, 2 of sugar, 1 of mineral matter, and 2 of starch, etc.

COLCANNON.

Take equal parts of cold cabbage and cold potatoes; cut all together well, with a knife; fry salt-pork, and when the pork is crisp, put the cabbage and potato into the fat; season with pepper, and a little more salt, if needed; cover closely with a plate and let it steam in the pan for $\frac{1}{2}$ hour. Do not stir it until you take it up, then stir all together, and serve hot, with the pieces of crisp pork around the edge of the platter. A little onion may be added to this if liked.

CORN.

Boiled.—Green corn when in proper condition for boiling should be well filled

out, but still in the milk, so that it will exude freely when pressed with the nail. It should be put when freshly gathered into slightly salted boiling water, and as soon as its milk thickens, and the raw taste is gone, it should be taken up, as longer cooking hardens it and injures its flavor. Corn for fritters, puddings, etc., may be a trifle older, but never out of the milk.

To cut corn from the cob the best way is to stand it on the small end, and with a sharp knife cut off about half the kernel; then with the back of the knife press and scrape out the remainder with a downward stroke. If scraped with the sharp edge it will carry many of the hulls with it, and they are not wanted. This is the best method of cutting off corn for canning or any purpose.

Dried Corn.—Select corn that is right for boiling, and boil 5 minutes in slightly salted water; then cut and scrape from the cob as above, and dry in the oven in shallow pans or on plates. Pack in paper bags, and hang in a dry place or it will mold. It sours easily, and the drying process should not be long. To use it, soak over night, and then cook like green corn. Season with butter, cream, pepper and salt to taste, and serve.

Baked Corn.—Take 48 full ears of sweet corn, cut and scrape from the ears as above, and then pound in a mortar; add (according to the juiciness of the corn) 3 or 4 cups of milk, 4 well beaten eggs, $\frac{1}{2}$ teacup butter, the same of flour rubbed fine in a little milk, 1 tablespoon of sugar, and salt to taste. Pour into a well greased earthen dish, bake 2 hours till browned on top, and place on the table hot. Eat with plenty of fresh butter.

Corn Chowder.—Take 1 can of corn, or the same amount of green corn cut from the cob, 2 oz. pork fried brown and chopped, 6 potatoes sliced thin, $1\frac{1}{2}$ quarts water; cook until the potatoes are done; then add 2 cups milk, and butter and salt to taste.

Escaloped Corn.—Cut corn from the cob, spread a layer in a basin, season, put on a layer of sliced tomatoes, season, and so on with alternate layers, seasoning each layer; then fill the dish with rich milk in which a little soda is dissolved, and bake 1 hour.

Fried Corn.—Select roasting ears, cut the corn from the cob, add salt and pepper, put it in a large pie-tin containing hot butter, set where it will cook slowly, stirring it often. If it should stick to the pan add a very little water, but not otherwise.

Corn Oysters.—Cut the corn from 6 ears, add to it 1 well beaten egg, 1 tablespoon of sweet milk, a little salt, and then flour enough to make a pretty stiff batter; drop a spoonful at a time into smoking hot fat, and fry a delicate brown.

Green Corn Pudding.—Take the pulp from 2 doz. ears of corn, $1\frac{1}{2}$ quarts of new milk, 2 crackers rolled fine, 3 eggs, 2 teacups sugar, and a little salt. Mix the crackers with the milk, then put in the corn and other ingredients; bake slowly $2\frac{1}{2}$ hours. Serve warm with butter and pepper.

Corn Souffle.—Take 2 cups of canned corn, 2 cups of milk, 2 eggs, salt to taste. Beat the eggs until very light; add the other ingredients; put the mixture in a buttered pudding-dish, and bake about 40 minutes.

Stewed Corn.—Cut young corn from the ear, put it in a basin, cover it with milk, and cook $\frac{1}{4}$ hour, stirring it frequently; then season to taste, with butter, pepper and salt, add some rich cream in which a little corn-starch is stirred, and serve.

Succotash.—Boil or steam the corn and cut it from the cob; allow 2 cups corn

for 1 cup beans. Any good, fresh shelled beans may be used; they should be boiled by themselves, in slightly salted water, until they begin to break; then drain them in the colander, mix them with the corn, and season to taste, with cream, butter, pepper and salt.

Indian corn is a native of America, where it was cultivated by the aborigines before the discovery of America by Columbus. There are many varieties of the plant, and the grains vary in color, but the yellow is the most common. Although it is deficient in gluten it is richer than other grains in oily and fatty matter; but the constituent elements of the different varieties vary a good deal. It is highly nutritious, and rivals rice and sugar cane in its importance to the human family. It is a very important article of consumption alike for man and beast. Owing to its lack of gluten it is not sufficiently sticky to hold together well, and so does not make good bread. Cornmeal is not suitable for an exclusive diet, but it makes a very valuable addition to our food resources, and is more fattening than wheat flour.

CUCUMBERS.

These are usually served raw, cut in slices, and served with pepper, salt and vinegar, and onions are sometimes added. Three or 4 hours before serving they should be peeled, sliced and placed in a large bowl of water to stand 1 or 2 hours; then the water should be poured off, and fresh, cold water added, and just before sending to the table, the water should be changed again. Serve in salad dishes, and send around with them salt, black pepper, vinegar and oil, to be added by each person as preferred. Thus served, they are not so likely to prove indigestible as when served, as they sometimes are, by slicing wilted cucumbers a few minutes before a meal, sending to the table in the first water they are placed in, and strong vinegar and salt added to that, which causes them to wilt still more; served in the latter way, it is no wonder that people say, "I cannot eat cucumbers—they always distress me."

Boiled.—After paring the cucumbers, and slicing about $\frac{1}{2}$ inch thick, boil them about 12 minutes in slightly salted water, containing a little vinegar. Serve with drawn butter or Hollandaise sauce.

Fried.—Peel and slice them, and soak in cold water an hour; this takes out the gummy qualities of the plant; then drain, and dry the slices on a cloth; dip the pieces in egg, then in flour, and fry a delicate brown in salt pork gravy.

Stewed.—Peel and slice fresh young cucumbers, and soak them an hour in cold water; then put them in a stew-pan with just sufficient water to cover them, and let them boil until soft; then take off the cover, to let them dry down a little, dredge in a little flour, to thicken the water they were stewed in, add a piece of butter, with seasoning of salt and pepper. Sweet cream can be used instead of butter, if one has it, and it is much better.

The cucumber is a native of Asia, and it has been cultivated from very early times. It is not very nutritious, and, generally speaking, it is not suited to weak stomachs, as it is indigestible and disagrees with many when eaten raw, but when stewed, it is light and wholesome. It contains about 96 per cent. of water, some grape sugar, and a little volatile flavoring matter.

EGG PLANT.

Baked.—Pare, slice and boil till tender, in slightly salted water; then drain, mash, and add bread crumbs soaked in milk, and season with salt, pepper, a little butter and minced parsley; beat together, put into a buttered baking-dish, sprinkle bread crumbs on top, and bake a nice brown.

Fried.—Cut in slices without paring, sprinkle on salt, pile them up, and weight them with a flat-iron or other weight; let stand about an hour and it will squeeze out much of their bitter flavor; rinse them off in cold water, drain, dip in cracker or bread crumbs, then in beaten egg, then in crumbs again, and fry brown in a frying-pan. It is sometimes dipped in batter and then fried.

Egg plant belongs to the order *Solanaceae*, which includes also tobacco and potatoes. All varieties of this order contain a bitter, more or less poisonous juice. The egg plant is

indigenous to the East Indies. There are several varieties, one of which is the Dead Sea apple.

ENDIVE AND SUCCORY.

Stewed Endive.—Wash, and free 6 heads of endive thoroughly from insects, remove the green part of the leaves, and put it into boiling water slightly salted. Let it remain for 10 minutes; then take it out, drain until there is no water remaining, and chop it very fine. Put it into a stew-pan with 1 pint of broth; add a little salt, and a lump of sugar, and boil until the endive is perfectly tender. When done, which may be ascertained by squeezing a piece between the thumb and finger, add a thickening of butter and flour, and 1 tablespoon of lemon juice; let the sauce boil up, and serve.

ENDIVE is said to be a native of China and Japan. It has long been cultivated as a garden vegetable, and used for salads and soups. It is slightly narcotic, and has a bitter taste, on account of which some people dislike it very much while those who like it call it a fine bitter.

THE SUCCORY or CHICORY belongs to the same order (the *Compositæ*) and the leaves are blanched and used for salads, while the root is used to adulterate coffee.

GREENS.

Dandelions are most commonly used for greens, either alone or mixed with other herbs, as plantain, young milk-weeds, scurvy-grass, beet-tops, horseradish tops, and the young shoots of poke or gorget; the roots of the latter plant are a violent cathartic, and should never be used. Wash and examine all herbs used for greens, and then boil them till tender in slightly salted water. A little baking soda added to the water in which greens are cooked will preserve their color, and it also softens the cellulose. Salt pork is commonly boiled with them, but they are rather more wholesome boiled without it. When done, drain them in a colander, and while draining cut them through and through in every way, to facilitate serving them; then put them on a platter, season with butter and salt, and send vinegar around with them. If salt pork is boiled with them, slice it, and use it to garnish the greens instead of the butter. Greens are usually eaten in the spring, and are chiefly valuable for their alkaline salts and water.

KOHLRABI.

Peel, cut it in two, and then slice thin; put into salted water, parboil, and then drain; then stew it in some weak broth; when nearly done, shred some of the green leaves growing at the top, and add them; they will tinge it a light green. When tender, drain out the kohlrabi. Make a bechamel sauce with the liquid in which it cooked, pour it over the vegetable, let it get hot, and serve.

Kohlrabi is a cultivated variety of the cabbage, distinguished by the swelling in a globular form of that part of the stem which is just above the ground. This protuberance is the part used, its uses being similar to the turnip. It is only fit to use when young, being then wholesome, nutritious and palatable; later it contains much indigestible fibrous matter. It is very valuable, also, as food for cattle.

LETTUCE.

If lettuce has become wilted in the market, let it stand with the stems in a bowl of cold water, for several hours before using, to become crisp again. Just before serving, wash carefully, then shake off the water, tear it in small pieces, as it is more convenient to serve in that way. It should never be cut with a knife. Pile it in a glass dish, and serve on salad dishes, or small plates. Vinegar and sugar is sometimes used for a dressing, or oil and vinegar, salt alone, French salad dressing, or mayonnaise, if preferred. It is delicious served with lemon juice, using sugar also if liked.

Fried.—Chop lettuce and the tops of 2 onions fine, add 2 well-beaten eggs, put a little salad oil or butter into a frying-pan; and pour in the mixture well beaten; cover, stir up when well heated, and serve with vinegar or lemon juice, or without either, according to taste.

Steamed.—Melt 2 tablespoons of butter in a sauce-pan, add vinegar and 1 well beaten egg; stir well together, and add the leaves from 2 large heads of lettuce, cover, and let it steam until the lettuce is well wilted; serve hot.

Lettuce is supposed to be a native of the East Indies, but it has been cultivated in Europe from very early times. It is wholesome and has a particularly pleasant taste. It is said to have a sedative action on the nervous system, which allays pain and induces sleep. Those who have no tendency to apoplexy, and who are troubled with wakefulness may be recommended to eat lettuce at supper. It contains little nutriment, being 96% water. It contains about 1% of mineral matters (especially nitre), which are useful.

MACARONI AND SPAGHETTI.

Boiling Macaroni.—Do not wash macaroni, as that extracts part of its nutrients. After breaking it into suitable lengths put it into plenty of boiling water, slightly salted, and boil actively until it is done; most cook books say to boil it 15 to 20 minutes, but you will find it better if you boil it $\frac{1}{2}$ to $\frac{3}{4}$ hour, but do not boil it *too* long or it will lose its nutritive qualities; then drain in a colander, pour on *cold* water, which will prevent its sticking, then spread the strips beside each other and cut them all at once into pieces about an inch long, which is better than leaving them in unwieldy lengths.

Baked Macaroni.—Boil and prepare as above directed; then butter a baking-dish, put in the macaroni, cover with bread crumbs, pour a little melted butter on top, bake in a moderate oven 5 minutes, and serve.

Fried Macaroni.—Boil the macaroni as above, and grate cheese. Take the cold macaroni, make it into little balls with the cheese, egg and bread-crumbs them, and fry in smoking hot fat to a rich brown.

Macaroni with Cheese.—Boil $\frac{1}{4}$ lb. and prepare as above directed; then make a sauce with $1\frac{1}{2}$ cups hot milk, and 1 tablespoon each of butter and flour, and salt to taste. Then in the bottom of the baking-dish put a layer of grated cheese, put on a layer of macaroni, and cover with the sauce; then others layer of cheese, macaroni and sauce; put fine bread crumbs on top, dot with bits of butter and a little grated cheese, and bake until the top is browned.

Macaroni with Milk Sauce.—Boil and prepare the macaroni as above; make a sauce with 1 cup milk thickened with a dessertspoon of butter and flour rubbed together, and a little salt; after it has boiled a few moments drop in the macaroni, and in 5 minutes, dish up and serve.

Spaghetti.—Boil this the same as macaroni, only it does not need to cook quite as long, and drain and pour on cold water the same. Cut it or not as you prefer. It can be treated otherwise much the same as macaroni. The same rules apply to *vermicelli*.

MACARONI is a particular form of wheaten flour. It is made by selecting the finest flour, making it into a paste with water, then pressing it through holes or molds in a metal plate, or stamping it to the desired form, then drying or baking it. When properly dressed it is pleasant and wholesome, but not so easy of digestion as some other wheaten preparations. It is nutritious, however, and if well cooked deserves an extensive use. Butter and cheese go well with it, as the butter supplies the fat it lacks, and cheese adds the albumenoid element in its casein.

VERMICELLI and SPAGHETTI are prepared in the same way as macaroni, only they are pressed through smaller holes, making them a little smaller round.

MUSHROOMS.

Fried.—This is the simplest form of cooking them. Peel the mushrooms, cut off the stalks, and place them in a frying-pan with a little butter; fry gently till they are quite tender, season with a little pepper, and pour the contents of the frying-pan over them; put them on buttered toast before pouring on the gravy, if desired. The trimmings of mushrooms are useful for flavoring gravies, etc.

Stewed.—Choose button mushrooms of uniform size. Wipe them clean and white with a wet flannel, and put them in a stew-pan with a little water, and let

them stew very gently $\frac{1}{4}$ hour. Add salt to taste, work in a little flour and butter, to make the liquor about as thick as cream, and let it boil 5 minutes. When ready to dish it up, stir in 2 tablespoons of cream, or the yolk of 1 egg, stir it over the fire a minute, but do not let it boil, and serve.

Mushrooms belong to the genus *Agaricus*, and over 1000 different species are known. They are dangerous vegetables to deal with unless you are sure you know the edible from the poisonous varieties. As mushrooms are put up in cans by those who are experts, the safest plan is to buy them in the market. They are used for seasoning sauces, ragouts, etc.; when fresh, they make a delicious stewed sauce. They are highly nitrogenous, and contain some fat; when dried, about $\frac{1}{2}$ their weight is nitrogenous. They are quite nutritious, but are by some considered indigestible. The fresh are better than the canned, but it is better in gathering them to be guided by some one who unerringly knows the edible varieties than to trust to any written description. Any mushroom having an offensive smell, or a bitter astringent, or even unpleasant flavor, is unfit for food.

OKRA.

Boiled.—Use only that which is young and tender; wash carefully, so as not to break the skins for the mucilage to escape. After washing, take off the stems, and boil, until quite soft, in water containing a little salt. When done, drain in the colander, place in the dish in which it is to be sent to the table, season with pepper and a little more salt; then pour over it butter sauce, or hot cream. Cook okra in porcelain lined or tin vessels, as iron colors it black.

The *Okra* is a species of mallow (the *Hibiscus esculentus*) possessing mucilaginous seed pods which are valuable for soups and stews. The dishes thus formed are healthful and nutritious, and are quite popular in the South and in France. The ripe seeds are sometimes used to adulterate coffee, and form one of its least objectionable adulterations. Use the pods when young and tender; when over 3 inches long, they become tough and stringy.

ONIONS.

Onions, as has been said elsewhere, should not be cooked with other vegetables, nor should the kettle in which they are cooked be used for other foods, as the odor of the onions clings tenaciously to the kettle for a long time after using it for that vegetable. So many people dislike onions, and others who like them do not eat them for other reasons, that great care should be taken in this respect. Remember the caution about using them in soups, when you are not sure of the tastes of the partakers; boil the onions separately, in the *onion-kettle*, and add them, at the time of serving, to the soup of those who like them.

When peeling and slicing onions, hold the hands under water and they will not then affect the eyes. After peeling onions the smell may be taken from the hands by rubbing them with celery. It is said that after eating onions, the smell may be overcome by eating a little parsley. Onions, carrots and turnips, should be cut across the fibre in rings, instead of being split the other way, as they will then cook tender more quickly. The rank flavor of onions may be relieved by soaking them for an hour before cooking, in warm salt water.

Plain, Boiled Onions.—Pour on boiling water, and take off the skins (use those of medium size, as the largest ones can be sliced for frying, and the smallest can be used for soups, if liked). Boil them in salted water, changing it once or twice during the process; when done soft, take them out with a fork, or drain them, put in a vegetable dish, sprinkle on salt, pepper, and bits of butter, which will be melted by the heat of the onions, and serve.

Onions a la Bordeaux.—Parboil medium-sized onions, then drain the water from them; put them in a kettle with butter the size of an egg, a little salt, and use stock, gravy or water, to moisten them; simmer them until tender, and the sauce is reduced; add the juice of a lemon, and send to the table hot.

Onions with Cream.—Skin the onions and cut them in small pieces and put them into a sauce-pan with a piece of butter and a little water, and let them cook thoroughly. Strain them and put them back into the sauce-pan, with a piece of butter; when this is melted, stir in a little flour, pepper and salt, and just before serving, a small quantity of cream. When this is added, the sauce must on no account be allowed to reach boiling point. Milk can be used in place of cream.

Escaloped.—Boil the onions till quite soft, changing the water twice. Butter a deep baking-dish, and put in a layer of onions just pulled apart in bits, but not chopped; season with bits of butter and a little salt; then add a layer of bread crumbs or crushed crackers, season to taste, and moisten with milk. Then put in alternate layers of onions and crumbs, seasoning each layer, till the dish is full; finish with the bread crumbs. Moisten the last layer very thoroughly with milk; bake $\frac{1}{2}$ hour in a hot oven.

Escaloped, No. 2.—Lay an onion, sliced, and fried brown in butter, in the bottom of a baking-dish; put a layer of cold boiled rice next, well moistened with an equal quantity of stewed tomatoes, and cover the whole with a layer of crumbs, wet with milk. Set in the oven till heated through and brown on top. The rice and tomatoes should be previously seasoned.

Fried.—If the onions are large, cut them in quarters first, then across in small pieces. The small ones may be cut in rings; put them in a spider, with a little dripping, or salt pork fat, to keep them from sticking; cover for 10 minutes, to partly stew them, then uncover and stir them until they are a nice yellowish brown. Butter may be used in frying onions, if preferred, but anything fried with butter must be closely watched, as it is more apt than other fat to scorch.

The onion belongs to the natural order *Allium*, which includes also the leek, garlic and shallot. It is supposed to be a native of India, or Egypt, in both of which it has been grown from very early times. In Egypt, it was an object of worship. Of all the flavoring substances used in cookery, it is the most valuable, next to salt. The onion possesses strong irritant and excitant properties, and is diuretic, expectorant and stimulating. It is believed to promote sleep, and is usually considered very nutritious, but opinions differ on this point. They are not suited to all stomachs, and some cannot eat them fried or roasted, while others prefer them boiled, by which process they are deprived of their essential oil. Some authorities claim for them medicinal qualities of a high order, and advise their more general use. The strong smell comes from a volatile oil, rich in sulphur.

Spanish Onions are large, white, and delicate in odor and flavor. They can be used to flavor other vegetables, or used as a salad when cut in thin shavings. They can also be baked, boiled or fried, and served as a vegetable.

PARSLEY.

Fried.—See that the parsley is dry, dip it in smoking hot fat 1 minute, drain on paper, sprinkle on pepper and salt, and serve.

PARSNIPS.

Boiled.—Wash and scrub well, and boil until tender in salted water; then put them into cold water and the skins will easily rub off. Then cut them up and serve in a bechamel or white sauce, letting them steep in it a little while before serving.

Parsnip Balls.—Boil as above and take off the skins; then mash smooth, removing any tough fibre; add salt, pepper, a little flour, and well-beaten egg; form into balls and fry in smoking hot fat.

Fried.—Boil and skin as above; when cold, slice them and sauté in butter or salt pork fat. Season with salt and pepper, and serve hot.

Stewed.—Wash, and scrape them clean, then cut them in little pieces about $\frac{1}{2}$ an inch square, put them in a kettle with just sufficient water to cover them, with a trifle of salt, and a little pepper. When they are done, take off the cover, and let the water they were boiled in evaporate, so that there will be none to turn off, and they will brown a little; do not stir them until you take them up; then add a generous piece of butter (remember the old adage, "Fine words butter no parsnips"); stir lightly with a fork, take them up into a hot vegetable dish, and send to the table.

Parsnips are a native of England, and are found in many parts of Europe and northern Asia. There are several varieties in cultivation. They are wholesome and more nutritious than either the carrot or the turnip. Parsnips are sweetish in taste, and are a particularly

useful vegetable in spring, when a change of diet is desirable, and fresh vegetables are scarce. They contain a little gluten, and a small percentage of starch and sugar. They go well with corned beef and salt fish. Although they are left in the ground during the winter, they should be dug as soon as the frost is out of the ground, and before the tops start to grow, as that detracts from their sweetness.

PEAS.

Young green peas should be washed in the pods, then shelled; then put the pods in a little *soft* water and boil about 10 minutes, as these pods are sweet and full of flavor which is worth saving; then skim them out, put in the peas, and boil them until tender; adding a little salt when almost done. Do not drain off the water they were cooked in, but serve it with the peas. When done, add a little butter, and salt if needed. A little sugar will be an improvement, and cream if you have it.

Green peas are nice cooked in a steamer without water; then salted, and cream poured over them.

If dried peas are boiled until very soft, mashed, and passed through a sieve, then seasoned and served, it will divest them of their indigestible outer coat, and it is really the best way to serve them. This applies also to beans. These pulses are among the most nutritious of foods, but the outer skin is almost indigestible *cellulose*, and is best gotten rid of as far as possible. (See what we say elsewhere about "cellulose.")

The water in which peas are boiled should not be thrown away. If to this, as it comes from the kettle, is added a little stock, or some good meat extract, a delicious soup is at once produced, requiring nothing more than ordinary seasoning.

Peas have been cultivated in the East from time immemorial, and were introduced into Europe very early in the middle ages. When eaten young, they are wholesome and digestible, and being richer in phosphates than most other vegetables, they are well adapted for invalids; but when older they are more indigestible. Split peas have the tough envelope removed.

POTATOES.

Probably the best method of cooking potatoes, certainly from September to June, is by steaming them in the skins; by this process the steam penetrates everywhere, and there is no loss of material or salts. If the skins are removed before boiling, a large amount of salts will be lost. Dr. Letheby estimates the loss when the skins are removed at 14%, and when not removed at only 3%. The addition of common table salt to the water is advantageous, as it modifies the extraction of the natural salts, and improves the flavor. The boiling should be thorough, so that the starch grains of which they are largely composed, may swell and burst the walls of cellulose, which confine them; too often, however, the potatoes are spoiled by allowing them to absorb water, and so become sodden after this stage is reached. Old potatoes, towards the end of the season, are improved by being peeled and put into cold water over night, by which process they regain in a measure their natural color and consistency. Put potatoes into cold water as soon as peeled; they turn dark if left exposed to the air. Old potatoes are rendered more digestible by being finely mashed; mash them *very* thoroughly indeed—you will hardly over-do it. Roasted potatoes are more nutritious than boiled, and mealy potatoes more nutritious than those which are waxy. Potatoes are spoiled by germination or growing (which exhausts the starch) and by frost; severe frost invariably kills them, so that when the thaw comes the process of putrefaction almost immediately sets in. The sweetness of potatoes which have been frozen and thawed, arises from the fact that the starch then changes to sugar on being exposed to warmth and air. Keep them frozen until wanted for use, then thaw by letting them lie in cold water, and use at once. Potatoes after being frozen decay very quickly, because in freezing, the water they contain bursts the cells. They can be put on to bake without being thawed, when frozen. Whenever the starch cells are intact, ripe potatoes can be cooked so that they will be mealy. The starch cells have not matured in unripe potatoes, so that when cooked they will not be so mealy, but they need not be soggy.

When potatoes sprout, the process of germination ruptures the starch cells so that they will not afterwards cook as mealy as before sprouting. If sprouts appear they should be removed or killed at once, as they exhaust the starch as they grow, and spoil the potato for food. (See "Keeping Provisions" for a method of killing their sprouts.)

To Boil Potatoes.—Wash them very thoroughly, or scrub them; a narrow strip cut off around the middle will allow the poisonous *solanine* to escape more readily; put them into boiling, salted water, and boil until soft (about 30 minutes) varying according to the variety and size. The thing to bear in mind is that to have potatoes mealy they must be taken out of the water as soon as the starch cells are cooked enough so that their walls are ready to burst; if drained off at once, the superfluous water will pass off as steam, and the interior will be dry and floury; if left longer they will absorb water and become sodden; therefore, as soon as they are tender enough to pierce readily with a fork, drain them, cover with a thick cloth, and set them for 15 or 20 minutes on the back part of the range, or where they will keep hot without burning. They can be kept thus, hot and dry, for several hours if need be, and right for eating.

Baked Potatoes.—Select potatoes as nearly of a size as possible, wash or scrub thoroughly clean, and if old, let them stand for 2 hours in cold water; then wipe dry (always dry potatoes for baking) and bake in a hot oven; it will take from $\frac{3}{4}$ to 1 hour. It is a good plan to prick the skin before putting them in to bake, to allow the escape of the steam and prevent their bursting; if not pricked, break the skin as soon as they are done to allow the steam to escape. Never cover baked potatoes to confine the steam, as that makes them soggy. Potatoes baked until just done are best; baked longer, they harden near the skin, lose their light, mealy character, and so deteriorate. Serve while hot. Baked potatoes are the most wholesome, because none of the nutrients are lost, part of the starch is turned to sugar, and the solanine escapes with the steam.

Potato Balls.—Mix 2 teacups mashed potatoes, 2 tablespoons melted butter, 2 well-beaten eggs, salt and pepper to taste; form into balls, roll in flour, and fry in hot lard, or drippings.

Broiled Potatoes.—Cut whatever you may have of cold boiled potatoes into lengthwise slices, about $\frac{1}{4}$ inch thick; dip each in flour, and lay them between an oyster broiler. Have the fire clear, and when both sides are nicely browned, lay the slices on a hot dish, put a piece of butter on each and season with salt and pepper. A very delicate dish.

Potato Cake.—Boil the potatoes till they are soft and floury, dry them, and, while warm, mash them thoroughly—this is usually done with the hand; then mix with them as much flour as will bind the potato without making it stiff, add salt, and roll out on a floured board, and shape the cake or cakes; then fry in boiling bacon-fat. Usually, the cake is rolled to about $\frac{1}{2}$ inch in thickness, molded to the shape of the pan, and fried whole. Properly made, it is wonderfully light. It requires some art in turning it. This is managed by heating only enough fat at first to fry one side, then, dexterously turning the cake on to a plate, and, when sufficient fat is boiling for the other side, sliding it into the pan again.

Boston Chips.—After paring the potatoes, soak them 1 hour in cold water; then cut them into thin slices, lengthways of the potato; after this, do not wet them again. Have a kettle of moderately hot fat ready; put the chips in a basket, dip them in the fat, leave a moment, lift out, dip in again, lift out again, and

then put in and fry until they turn a golden brown; then lift out, put them in a colander, sprinkle on salt, set in the oven a minute, and serve.

Saratoga Potatoes.—Shave them thin, soak in cold or ice water 20 or 30 minutes, drain them, dry on a towel, and fry in boiling fat to a light brown; when done, drop them on blotting or unglazed paper to absorb the extra fat; sprinkle on salt, and serve hot. Enough can be done at one time, if desired, for several meals; they keep well, are easily warmed over by setting them in the oven a few minutes, and are nearly as good as when fresh.

A similar method is to cut them in cubes, instead of thin strips. They require a little longer frying, but are nice for a change, and are more moist and digestible than chips.

Creamed Potatoes.—Into a frying-pan put 1 tablespoon butter; as soon as it bubbles, stir in 1 tablespoon of flour, and 1 cup hot milk; season to taste with pepper and salt; then put in 2 cups cold boiled potatoes, which are cut into small cubes, beat thoroughly and serve.

Potatoes with Cheese.—Put alternate layers of thinly-sliced cheese, and sliced cold potatoes into a dish, with the cheese on top; dot with butter, and bake a light brown in a slow oven.

Escaloped Potatoes.—Slice small, raw potatoes quite thin. Butter a dish well, and sprinkle fine bread crumbs on the bottom; then put in a layer of sliced potatoes and season with salt and pepper and bits of butter. Then add another layer of crumbs, and so alternately, until the dish is full, having crumbs on top with a good supply of butter. Moisten with milk and a little cream, if it is to be had, and bake until potatoes are creamy and nicely browned on top. If the oven is very hot, it is well to cover them part of the time.

Potatoes and Eggs.—Take 2 large cups of cold, well-mashed potatoes, and $\frac{1}{2}$ cup melted butter; beat together until light and smooth, and add 2 well-beaten eggs, 1 cup milk, and a little salt; beat all together; put into a deep dish, brown in a quick oven, and serve hot.

Fried.—Peel and slice cold potatoes, and fry first one side, then turn and fry the other, in a frying-pan, with salt pork fat, beef drippings or butter. Sprinkle with salt and pepper, and always send to the table hot. Raw potatoes can be fried in the same way. They will be better if they are soaked in cold water after being peeled and sliced; the water will take out the starch and they will then fry more crisp. The French usually fry them, like doughnuts, in smoking hot fat. Take them out the minute they are browned, drain on paper, season, and serve hot.

Potatoes Warmed in Gravy.—Chop cold boiled potatoes in the chopping-bowl (with a knife they are never cut even, some pieces are large, while others are almost mashed); after the potatoes are pretty fine, put a piece of butter in the frying-pan, turn in the potatoes, brown slightly, then turn in gravy (chicken gravy is very nice), and stir the potatoes carefully with a fork, so as not to mash them, until the gravy is very hot. Season with a little salt and pepper.

Lyonnaise Potatoes.—Slice 6 cold boiled potatoes, or cut into dice. Put a little butter in the frying-pan, put in $\frac{1}{2}$ onion, chopped fine, and fry it a light brown; put in the potatoes and fry them a light brown, turning them without breaking; then stir in 1 tablespoon of minced parsley, and serve hot. A few drops of vinegar added with the onion, improves the flavor.

Mashed Potatoes.—Pare and boil them in slightly salted water; when done,

drain off the water, and mash them in the kettle with a wire masher; add a level teaspoon of salt to 10 potatoes, and a little cream, or, if one has no cream, a piece of butter and a little hot water; mash and beat against the side of the kettle, until they are creamy—you can hardly mash too much; keep them hot in the kettle until ready to serve. Pour hot water in the vegetable dish to warm it, pile the potato in the dish, put dots of black pepper over it, and send it to the table.

Potatoes a la Maitre d'Hotel.—Cut cold boiled potatoes in small squares, the size of dice, and put them over the fire in a stew-pan, with butter or cream, a little chopped parsley, salt and pepper to taste, and a few drops of vinegar or lemon juice. Let them get hot, shaking the pan to keep them from burning, and serve them in a hot dish that has been rubbed with a raw onion.

Potato Puff.—To 2 cups of mashed potatoes, add 2 tablespoons of melted butter, and beat until light; then mix in it 2 eggs, well beaten, a cup of milk, and salt to taste. Beat together thoroughly, and bake in a buttered pudding-dish in a quick oven until nicely browned. A fine breakfast dish.

Puffed Potatoes.—Cut peeled raw potatoes in thin slices, and fry in a kettle of hot fat; stir with a fork to prevent their sticking together. When they are soft, take them out with a skimmer and let them drain on a sieve until cool; then return to the hot fat and fry 4 minutes longer; the second frying causes the slices to puff and become hollow. Sprinkle them with salt and serve.

Potato Stew.—Take 6 or 8 large potatoes, peel and slice thin; cut 3 thick slices of salt pork into little squares, and put into the bottom of the soup-kettle; fry thoroughly, then add the potatoes, with salt, pepper and a little sage, if liked, and 1 large tomato peeled and sliced; cover with water and closely cover the kettle. Cook until the potatoes begin to break in pieces. Cheap and good.

Stuffed Potatoes.—Choose 12 good-sized potatoes, wash them, and scrub the skins with a brush; bake them until done—about one hour. Remove them from the oven, cut a slice off one end of each, scrape out the potato, mix it lightly with a small piece of butter, pepper and salt, replace it in the skin, and, when all are done, return them to the oven for 10 minutes. In serving, cut a slice off the other end to make them stand upright on a flat dish, leaving the top uncovered. A little cooked meat can be mixed in before replacing the potato in the skin, if desired.

Potato Turnovers.—Have some cold roast beef, or veal and ham mixed, and cut very fine. Take hot mashed potatoes and make into a paste with 1 or 2 eggs, according to quantity. You should have twice as much potato as meat. Roll the potato out, dredging with flour. Cut this round, about the size of a small saucer. On one half put the chopped meat, fold the other half over and fry a light brown.

Warmed Over Potatoes.—(1) Slice up cold potatoes, fry in a little butter, lard, or nice drippings, season with salt and pepper; fry a nice brown, and just before serving pour in a little cream or milk; toss about for a few minutes. Serve very hot. Or, (2) grate them into the dish they are to be served in, dot with butter, sprinkle on salt, and bake about 5 minutes in a hot oven. Or, (3) cut into dice, put into a dish, add a little milk, butter and salt, and heat in the oven. Never waste any potato left over.

The potato is a native of America. It was introduced into England in the sixteenth century, but it was nearly 100 years before it was cultivated to any extent. As food, it ranks next in value to the cereals, but it is not as cheap, and desirable a food in itself as is often supposed, since it does not contain the necessary food elements in right proportions for a steady diet. It is best eaten as an addition to pulses, lean meat, and other nitrogenous

food. Potatoes consist mainly of starch and water, about 78% being water; starch 18%, and fibrin and albumen 2%. Young new potatoes are more indigestible than old ones. In a floury and mealy state they are easily digested, but when close and waxy they are not. They possess slightly laxative qualities. The waste in boiling is much less when they are boiled in their skins, because that is of a cork-like substance partly impervious to water. There is considerable waste in peeling potatoes because the most albuminous part lies immediately under the skin. In and near the skin itself, is a poisonous acid juice, called *solanine*, but that is destroyed or dissipated when the potatoes are cooked. It is this poisonous acid which causes the disagreeable smell and taste of the water in which potatoes have been boiled, and it makes the water unfit for use.

SWEET POTATOES.

To Boil.—Select those of an even size, wash perfectly clean, and boil until tender; then peel, cut them in two lengthwise, and place them on a buttered tin in the oven to brown; in this way the skins are disposed of before sending them to the table. It takes longer to cook sweet potatoes than the common ones.

Baked.—Wash medium-sized sweet potatoes and place on the top grate of a hot oven; when the potatoes are about half done, pierce them with a fork to let the steam escape; this will make them dry and mealy.

Broiled.—Boil, let cool, and peel the number of large, sweet potatoes required. Slit them in 2 or 3 slices, dip in melted butter, and place them in a double grid-iron. Broil a light brown on both sides, dish them up, and after pouring some melted butter over the potatoes, they may be served.

Fried.—Peel the raw potato, cut it into very thin, lengthwise strips, and fry in smoking hot fat, deep enough to immerse them in; as they rise to the top and brown on one side, turn them and let them brown on the other. Nice, and new in the north.

Sweet Potatoes and Pork.—Select white looking fresh pork, rib pieces; cut them thin and free from fat and bone; fry them carefully, and cook thoroughly until nicely browned; then place on a warm platter; cut boiled sweet potatoes in slices lengthways, and fry until brown in the fat in the spider; use care not to burn them; salt them as they cook; then arrange on the platter around the meat; serve very hot, with apple-sauce and hot johnny-cake.

Sugared Sweet Potatoes.—Boil those of medium size, dry off in the oven, peel, let them get cold, and then cut in two lengthwise; then lay each half on its round side in a shallow pan or dripping-pan, put a good bit of butter and a little salt and pepper on each one, sift granulated sugar generously over all, and put in a quick oven to brown; it takes about 40 minutes. Excellent and new.

The sweet potato is probably of American origin, though now extensively cultivated in many countries. It belongs to the *Convolvulus* order. It contains more sugar than the true potato. Its constituent parts are, water 71 parts; albumen, 1½; starch, 15; sugar, 3; pectose gum and cellulose, 5; mineral matter, 1.

PUMPKINS.

Pumpkin Butter.—Peel and cut enough pumpkin to fill a large iron or porcelain kettle. Select the sweetest pumpkins, as you would for pies. Stew 4 or 5 hours, until it is a rich golden brown color, and dried to a thick paste. It must be frequently stirred at last, to prevent burning. This sauce is especially good served with pork, either salt or fresh.

Pumpkins are a species of gourd. They were formerly more used for food than at present, having been somewhat supplanted by the squash. They possess one peculiar quality—that of absorbing and retaining the flavor of whatever they are cooked with. If stewed with apples they taste exactly like them in puddings and tarts, and they may be used to advantage in most savory cookery. They contain about 1% of sugar, 2 to 5% of starch, and about 1% of fat and nitrogenous matter. An anonymous writer in the early settlement of America wrote home to England as follows:

"If fresh meat be wanting to fill up our dish,
We have carrots, and pumpkins, and turnips and fish,
We have pumpkins at morning, and pumpkins at noon,
And if it were not for pumpkins we should be undone."

Pumpkins for winter can be stewed and canned like fruit, and will then nearly equal fresh pumpkins.

RADISHES.

They are washed and scraped, and to keep them fresh looking are placed on the table in glasses containing a little water. All varieties are served in the same way.

There are many varieties of the radish, and they are supposed to possess some power in stimulating the appetite. The radish is demulcent, stimulating and diuretic, but it is not suitable for those with weak digestive powers.

RICE.

Boiled.—Pick over carefully, and wash at least twice, in cold water, washing it thoroughly clean, and drain. Then put the rice into plenty of well salted boiling water, and make it boil actively so that the water will bubble and toss the rice around; cook it till tender, *but no longer*, for if the grains burst they will surely stick together; test it often by squeezing a grain between the fingers; if it flattens easily it is ready to drain; it should cook in 15 to 20 minutes, according to the age of the rice. When soft, drain off the water, remove the rice, and set it at the back of the stove to dry about $\frac{1}{4}$ hour. If you stir it while cooking, use a fork instead of a spoon, as that separates the grains. Cooked thus each grain will be distinct and separate. Unless the water is used for soup, boiling rice is less desirable than steaming it, because so much of its nutrients are dissolved out and thrown away in the water.

Baked.—Take some cold boiled rice, add 1 or 2 well-beaten eggs, some grated cheese, some finely chopped boiled ham, and a little melted butter; put it in a baking-dish, sprinkle grated cheese on top, and bake in a good oven until a broom straw, when thrust into the middle, will come out clean.

Steamed.—Pick over the rice and wash it thoroughly in cold water; put it in a farina boiler, with $\frac{1}{2}$ teaspoon of salt and 1 pint of boiling water to each cup of rice; cover, and cook till soft (about $\frac{1}{2}$ hour); then remove the cover and let it dry off, stirring it with a fork to facilitate the escape of the steam and keep the grains separate. If you have no double boiler it can be put in a tin pail and steamed in the steamer. Stock or milk can be used instead of water, if desired, but use a little more.

Rice with Cheese.—Steam some rice in either water or milk; then mix in some grated cheese, pepper and salt; put the mixture in a pie-dish or tin, shake some grated cheese on top, and bake until nicely browned. The mixture must be fairly moist before it is baked, or it will get dry.

Rice appears to be a native of the East Indies, and it has formed the principal food of the Indian and Chinese people from remote antiquity. It is now cultivated in every country where the climate is suitable. It contains about 75% of starch, and because it has little fat or albumen, it is not fit for a sole article of diet. In nourishing properties it is greatly inferior to wheat, but it is a light and wholesome food, and is well adapted for invalids. As it has little of the heat producing elements, it is suitable for the inhabitants of hot climates. It goes well with meat and other articles rich in albumenoids.

SALSIFY OR VEGETABLE OYSTER.

Scrape the roots clean, and keep them covered with cold water containing a little vinegar, until time to cook, as exposure to the air will blacken them. Then boil till tender, in salted water. After boiling thus, it can be mashed, the fibres picked out, salted to taste, butter worked in, and served in a warm vegetable dish. Or, after boiling, they can be drained, sliced, dipped in fritter batter, and fried in smoking hot fat; or egg and bread-crumbed, and then fried. Or the slices can be sautéed in a frying-pan, with butter or salt pork fat.

Creamed Salsify.—Wash it, scrape, cut into slices $\frac{1}{2}$ inch thick, boil till

tender in a sauce-pan; then turn off most of the liquor, add milk or cream, and salt to taste, and boil 5 to 10 minutes longer; thicken the liquor with rice flour or other thickening, and serve hot. If milk is used add a large lump of butter.

Escaloped Salsify.—Boil, mash it, moisten with milk, add butter, salt and pepper to season, put it in a baking-pan, cover with dry crumbs, and bake in a quick oven about 7 or 8 minutes.

Salsify (also called vegetable oyster) belongs to the natural order *Compositæ*, the same order to which lettuce and chicory belong. It is the root which is used, which is shaped somewhat like the common carrot. As a rule, members of this order are tonic or stimulant in their medicinal qualities.

SEA-KALE.

Boiled.—Wash the kale thoroughly and examine it for insects; tie it in bunches like asparagus, and boil until tender, in water containing a trifle of salt; when done, drain thoroughly, on a cloth, untie the bundle, and spread the kale on slices of toasted bread; then pour over it hot butter sauce.

Sea-kale resembles asparagus, and belongs to the same tribe. It is easily cultivated. It is so light that the most delicate organizations may readily eat it, and it is nutritious, stimulating to the appetite, and easily digested. It usually contains no sugar, but some mucilage and starch, the percentage being, starch and mucilage, 3; cellulose, 1; albumen, 2.4; mineral matter, 0.6, and water, 93.

SCOTCH KALE.—This has a fine head of curly leaves; the tenderest are used as greens, and are prepared in the same manner as dandelions and other greens. This herb may be planted late, like late turnips, and is in season, if planted early, from midsummer to late fall; it may be picked green and fresh, even after the ground is covered with snow.

SAUERKROUT.

To Make.—Choose firm, white cabbage heads and remove the coarse outer leaves, and the large fibres of the back of the white leaves; chop coarsely, and for about 30 medium-sized heads, allow $\frac{1}{2}$ lb. of salt and mix it well with the chopped cabbage; cover the bottom of a small oak barrel or cask with cabbage leaves, and press the cabbage firmly into the barrel, or pound it down with a wooden pestle. When all the cabbage is firmly packed, cover with cabbage leaves and a cloth, then have a round cover that goes into the barrel, press it down firmly and put a stone on that to keep it in place. As soon as it begins to ferment (and you will know it by the odor) place the barrel in a cold cellar or storehouse, where it will not freeze. Made in October, it is ready to cook in February.

To Cook.—To cook sauerkraut, take it from the barrel, and if very sour it can be washed in a plenty of water and drained dry in the colander; put butter, dripping or salt pork fat in the frying-pan, add a sliced onion, if liked, put a few spoonfuls of water in the pan, with the kraut; cover with a plate and stew slowly for an hour; then stir it well before taking up. It is eaten with a little pepper and vinegar, or with sour baked apples.

SPINACH.

Boiled.—Wash it many times in cold water to thoroughly and perfectly free it from sand and dust. Then put in a close sauce-pan, without a drop of water, over a moderate fire; cover closely, and cook till tender—about 1 hour. Its own juice runs out, and it cooks in that. Spinach should be one of the most healthful of springtime vegetables, but its most valuable elements are its mineral matters or potash salts, and by the old method of cooking they are almost entirely lost. The above method preserves them. When done, drain, chop fine, and season with butter, pepper and salt; or pour over a cream sauce. Serve with slices of hard-boiled egg over it.

Spinach is supposed to be a native of Western Arabia. It was not known to the ancients, but was introduced into Europe some 400 years ago. It is laxative, cooling, wholesome, and easily digested, but does not afford much nutriment.

SQUASH.

Summer Squash.—*Boiled.*—They must be so young that the thumb nail will

strike through the shell. Wash and quarter or slice them (you need not remove the skin or seeds); then boil till tender in slightly salted water—about 20 or 30 minutes. When done, turn off the water and set the kettle back on the stove; mash, and stir to let the water dry out, then add butter, salt, and a little white pepper. Keep hot on the back of the stove until time to serve.

Baked.—Pare the squash, remove the seeds, and steam it until tender; then mash, season with butter, pepper and salt, and to a medium-sized squash add 1 cup cracker or bread crumbs; stir together well, put it in a greased baking-dish, and bake 1 hour.

Fried Summer Squash.—Peel the squash, cut in small squares, and fry in hot butter; season with pepper and salt. It will be as delicate as and taste much like egg plant. Try it.

Winter Squash.—This usually has a hard shell, and has to be broken with a hatchet, by dropping on a plank floor, or by sawing with the meat saw. Break in small pieces for the kettle, scrape out the seeds, and wash clean. Put the pieces in the kettle with the shell side up, have a little salt in the water, which should cover it, and cook for an hour, if it does not break to pieces. When done, take the shells in a clean cloth, and, with an iron spoon, scrape the squash into a basin to keep hot on the back of the range. If too dry, moisten with a little water, and add butter, salt and pepper to taste. Some winter squashes have a thin soft shell and are watery; they can be baked in the oven, then seasoned as above. Both summer and winter squashes are also steamed instead of boiled by some cooks.

The squash is a species of gourd, belonging to the same general order as the cucumber and pumpkin. It is a pleasant and wholesome article of food, but contains little nutriment, having about 1% of sugar, 2 to 4% of starch, and less than 1% of nitrogenous matter.

TOMATOES.

Baked.—Scald and skin tomatoes that are whole and firm, and ripe enough to be thoroughly red; cut a slice from the stem end, and with a sharp knife take out the hard core; arrange them in a round baking-tin well buttered, with the cut side upward; put a sprinkle of salt and pepper over them, and, in each one, a bit of bread well buttered. Then bake.

Baked Stuffed Tomatoes.—Choose large tomatoes, as nearly the same size as possible; from the stem end take out the seeds and inner part of the tomato; make a stuffing of bread crumbs, finely-chopped cold ham, and the chopped tomato; season with butter, pepper, a little salt and mustard. Fill the tomatoes with the stuffing, and bake them. Add a little butter to them before putting in the oven, and a very little water in the baking-pan. When they are done, set them where they will keep hot; add a little more butter and hot water to the baking-pan, and make a thin gravy, thickening it with browned flour and stirring in a tablespoon of sugar.

Tomatoes and Cream.—Slice the tomatoes rather thick, and turn off all the juice that escapes; sprinkle with sugar, and just before they are served pour cream over them. To those who have never tried it, this dish may be uninviting, but to those who are fond of the natural flavor of the tomato, it will be found delicious. The yellow tomato preserves are very nice served with cream. Accompanied with nice white cake, no daintier dessert could be wished for.

Tomato Croutes.—Small tomatoes are better for this dish. Scald and peel, then cut a slice from the stem end, leaving about $\frac{3}{4}$ of the tomato; place them, the cut side down, on slices of buttered bread, arranged in a buttered baking-tin;

sprinkle with salt and pepper; bake $\frac{1}{2}$ hour. This dish can be served with cold meat, and is well worth trying.

Escaloped Tomatoes.—Tomatoes are escaloped like oysters. Put a layer of bread crumbs in a buttered baking-dish; over this, a layer of sliced tomatoes, seasoned with salt, pepper, butter, and a very little sugar. Have the top layer of bread crumbs, and scatter over it bits of butter, and then bake. A little of the gravy left from roast meats would add to the flavor, and might be poured over just before it is put in the oven. Canned tomatoes can be used almost equally well.

Raw Tomatoes.—Tomatoes are often eaten raw. Some people object to having the skin removed, but if properly done, the flavor is not injured. Select those which are firm, smooth and fully ripe, put them in a pan, and pour on enough boiling water to cover, and leave them 15 seconds, but no more; then pour off, and fill the dish with cold water. Take out, remove the skins and cores, and set on ice till wanted. Cut in thin slices and serve ice cold. They are delicious eaten either with sugar alone, or with sugar, salt, pepper and vinegar. They should be prepared several hours in advance, to be eaten this way; or, if wanted for breakfast, skin them the night before, and keep on ice till ready to use them.

Fried Tomatoes.—Select the largest firm, ripe tomatoes for frying. Cut them in halves and put them in a frying-pan that can be covered, having first melted 2 tablespoons of butter in the pan; place the tomatoes with the skin side down, and on the top of each half put as much of bread-crumbs as it will hold; season with salt and pepper. Cover the tomatoes and allow them to cook 10 minutes without removing the cover; then take out the tomatoes on a platter and set where they will keep hot while you prepare a gravy for them, as follows: If the butter has cooked away, add a little more to the frying-pan; pour in $\frac{1}{2}$ teacup of boiling water, then thicken with a teaspoon of flour wet with a little water; stir until it boils, season with salt and pepper, and pour over the tomatoes.

Tomatoes and Macaroni.—Turn $\frac{1}{2}$ lb. of tomatoes into a sauce-pan, with a spoonful of stock or a bit of butter; let them cook until tender enough to pass through a coarse sieve or colander, then re-heat, season nicely, adding a few drops of lemon-juice or vinegar, and pour over a flat dish covered with nicely-boiled macaroni, *not* the pipe; *that* answers when it is to be cut into short lengths. Cover the surface with grated cheese and bread crumbs, put a few bits of butter over it, and brown it before the fire or in a quick oven.

Salted Tomatoes.—Pick ripe tomatoes (but not too ripe) and put in jars. Put strong salt brine over them, and cover with a plate, having the brine just cover them, and then in the winter when you want to use them, take out what you want and soak 24 hours in cold water, then peel and slice the same as when they are fresh from the vines. They are much better in this way than when canned.

Stewed Tomatoes.—Scald, peel, slice and stew slowly in a sauce-pan about $\frac{1}{4}$ hour; then add salt, pepper, butter, and a little sugar to sweeten; stew $\frac{1}{4}$ hour more, stirring in the seasoning. Thicken, if desired, with cracker or bread crumbs, or corn-starch, or flour dissolved in cold water. Canned tomatoes can be prepared in the same manner.

Tomato Toast.—Scald and peel nice, fresh tomatoes, and stew till tender; season with butter, salt, pepper and a little sugar. Take as many slices of bread as needed for the family, toast well, butter, and arrange in layers in a deep dish with some of the stewed tomatoes on each slice; cover and serve at once.

Canned Tomatoes.—These are nice stewed and baked in alternate layers with boiled rice, or boiled macaroni, seasoning the layers with butter, pepper and salt.

The tomato is a native of South America, and belongs to the nightshade order, which includes the potato and tobacco. It was considered poisonous or unfit for food until within a comparatively few years. The fruit is the only part which is eaten. It is a delicious article of food, and exerts a healthy influence upon the liver and biliary organs, and is considered by some physicians, a good remedy for indigestion and dyspepsia. It contains about 6% of sugar, a little less than 1% of malic acid, to which it owes its refreshing and cooling qualities, a little pectose, etc. The skins will readily come off if boiling water is poured over them and they are allowed to stand a while.

TURNIPS.

Boiled.—Wash, peel, cut in pieces, and boil until tender in just enough salted water to cover them. They are then sometimes mashed until the lumps are all out, then seasoned with salt, white pepper, and a little butter; serve hot. A better way than mashing, because it makes them less soggy, is to chop them; when boiled tender, turn them into a wooden bowl, season with salt, white pepper and a little butter, chop them very quickly, and put them in the oven to become hot before serving. Small turnips are very nice served whole, with butter, salt and pepper, and if one has it to spare, a few spoonfuls of cream on them.

Creamed Turnips.—Boil, cut in dice, and pour over a cream sauce. A drawn butter, or any white sauce, can be used instead.

Piedmontese Turnips.—Half boil the turnips; after cutting them in slices butter a pudding-dish, put in the turnips, moisten them with a little milk or cream, dust over them pepper, salt and bread crumbs, and a little grated cheese, and bake in the oven until of a bright golden brown. Omit the cheese if preferred.

The turnip is used throughout the United States and Europe, but it does not thrive in a hot climate. It contains little nutritive matter, and is good for human food only when taken with other articles. When eaten alone it creates flatulency. It contains no starch but has instead a jelly-like substance called pectine, and in the best kinds a slightly acid quality also. It is somewhat laxative and diuretic. It is not good for those with weak digestive organs. Turnips need much salt as they contain none, and being without fats or starch they go well with fat meats, potatoes, etc., which contain those elements.

YAMS.

Boiled.—Peel and cut into slices about $\frac{1}{2}$ inch thick, put them into a kettle with barely enough salted water to cover; cover closely and cook till tender—about $\frac{3}{4}$ to 1 hour. Drain in a colander, keeping it hot. Make a white sauce, pour it over and serve.

Fried.—Peel the yams and slice as above; parboil 20 minutes in slightly salted water; then drain, wipe dry, and fry brown in butter, pork fat or oil, as preferred; sprinkle with a little salt and white pepper while frying:

The yam is a native of tropical countries. The roots are tuberous, something like our own potatoes. When boiled or baked they are nice in flavor, and very nutritious. Although somewhat resembling sweet potatoes they are of a widely different order, belonging to the order *Dioscorea*. They contain water, 79%; albumenoids, 2%; starch, etc., 16%; fats, 0.5%; mineral matters, 1 $\frac{1}{2}$ %.

BREAD, BISCUIT, ETC.

Bread has well been called the staff of life. It is in vegetable foods that which flesh is in animal foods, and each contains nearly all the elements needed for nutrition. The following table will show the percentage of the different food elements found in the various grains:

TABLE SHOWING THE PERCENTAGE OF FOOD ELEMENTS IN GRAINS, ETC.

	Water. %	Albu- menoids. %	Carbohy- drates. %	Fats. %	Mineral Matters. %	Potential Energy in 1 lb. Calories.
Wheat Flour.....	12.5	11.0	74.9	1.1	0.5	1645
Buckwheat Flour.....	14.6	6.9	76.1	1.4	1.0	1605
Rye Flour.....	13.1	6.7	78.7	0.8	0.7	1625
Graham Flour.....	13.1	11.7	71.7	1.7	1.8	1625
Cornmeal.....	15.0	9.2	70.6	3.8	1.4	1645
Oatmeal.....	7.8	14.7	68.4	7.1	2.0	1845
Barley (Pearl).....	11.8	8.4	78.1	0.7	1.0	1635
Wheat Bread.....	32.3	8.8	56.3	1.7	0.9	1280
Boston Crackers.....	8.3	10.7	68.7	9.9	2.4	1895
Oatmeal Crackers.....	4.9	10.4	69.6	13.7	1.4	2065
Cracked Wheat.....	10.4	11.9	74.6	1.7	1.4	1680
Starch.....	2.0	0.0	97.8	0.0	0.2	1820
Sugar, Granulated.....	2.0	0.0	97.8	0.0	0.2	1820
Molasses.....	24.6	0.0	73.1	0.0	2.3	1360

The above analyses give, of course, only the average composition; the analysis of different varieties varying a good deal. Thus some varieties of corn contain as low as 3% of fat, and others as high as 9%, the yellow varieties, as a rule, containing more than the white. So also different varieties of oatmeal and other grains vary in their composition somewhat. Wheat makes the best bread of any cereal. This is owing to the peculiar character of its albuminous matter, which is a greyish-yellow, elastic, sticky substance, called gluten. This gluten is a compound of at least 4 albumenoids, called gluten-film, gluten-casein, gliadin, and mucidin. Grains like corn and oatmeal, which lack gluten, do not make good bread. Wheat bread best meets the requirements of adult life. The gluten furnishes the flesh making elements, and the starch the heat giving, while deficiencies in the amount of phosphates, etc., can be made up by the use of eggs, vegetables, etc.

The essentials of bread making are (1) perfect cleanliness; (2) good flour; (3) good yeast; (4) the dough must rise well; (5) the oven must be right—neither too hot nor too cold; (6) the careful attention of the cook throughout the process.

Wheat bread is the kind most commonly eaten in this country, and it is made of the best quality of wheat flour by mixing it with water or milk and yeast of some kind, which causes a more or less rapid fermentation according to the kind of yeast employed. A thorough kneading or molding process is also essential in making this bread, and great care and skill employed in the baking.

The yeast must be fresh and good or the bread will be heavy and indigestible; stale, sour yeast or leaven, produces instead of vinous an acetous fermentation, and the result is a sour, heavy and unwholesome loaf.

Mixing the Bread.—Always sift the flour before using it, and it should also be dry. Dough for bread, if mixed at night, should be made late in the evening, and well molded (or kneaded as the process is usually called), and in cool or cold weather should be placed where it will retain the warmth of the water or milk used in mixing the dough. The wetting should be quite warm, but not hot enough to scald the yeast. The flour should also be warmed in cold weather by setting the pan which contains it on the back of the range, and constantly stirring it from the bottom of the pan, until the flour feels warm to the hand. The hand is better for stirring it, as a spoon does not always prevent its caking in the bot-

tom of the pan. When thus warmed it will rise much more quickly, and when thoroughly warmed it can be mixed with the warm wetting. A tablespoon of salt is added, and many cooks use a tablespoon of sugar, which hastens the fermentation and rising of the dough. In hot weather the flour does not need warming, and the wetting may also be of the temperature of the air. The dough will be light in the morning, and can be molded again, divided into loaves and put into the baking-tins to rise again, when it will be ready to bake; or, instead of molding it early in the morning, if other work is pressing, or the third rising is desired, it may be cut down with a knife, until it is very nearly of the bulk it was before rising, and left to rise again until after breakfast is over, when it can be molded to put in the baking-tins. One good bread making rule is to mold 20 minutes at night after mixing, keeping the dough as soft as possible; then cut down well the first thing in the morning; after breakfast mold 10 minutes, with as little added flour as possible, then divide into loaves and put it in the baking-tins.

If dough becomes chilled, put the pan at once into a larger one filled with warm water, and as fast as the water cools replace it with more which is warm, until the dough begins to rise again. By keeping rising dough at a temperature of about 50° (by putting it in a cellar or otherwise), it may be kept at a standstill for hours without being injured; then it should be brought into a warm room about an hour before baking, to finish the rising process.

The best way of mixing bread is to mix the yeast well into the water or milk, and then work in the flour. This is better than the old way of making a hole in the flour and then pouring the liquid into it, as less kneading will be necessary, and the yeast will be more uniformly mixed with the flour. It is better to measure the liquid, letting that regulate the size of the loaf, and then add enough flour to make it the right consistency, than it is to measure the flour first and then add the liquid. Measure the liquid, and either mix in all the flour at first, or else add about half at first, making a batter, let it rise well, then add the remainder, and let it rise again. By the latter method the bread rises more quickly, and milk bread may in the summer be thus mixed in the morning and baked by noon. Housekeepers can try the 2 methods and adopt the one which they prefer.

When yeast bread is mixed in the morning instead of at night (and with the quickly rising compressed yeast this is often done) instead of molding the bread when first mixed, it can be stirred with a spoon, and the flour cut into it, until the dough is quite stiff; then cover it to keep it warm and in 2 or 3 hours it will have risen so that more flour can be added, then molded, and put into baking-pans to rise. Many persons prefer this bread as being better and sweeter than when risen over night.

Remember that getting the dough too stiff is one great fault in making bread; aim to have it as *soft as possible* without being at all sticky or wet. If either the sponge or the dough be permitted to overwork itself, that is to say, if the mixing and kneading be neglected when it has reached the proper point for either, sour bread will probably be the result in warm weather, and bad bread at all times.

The Kneading.—The object in kneading the dough is to thoroughly mix the flour and water, and evenly distribute the yeast, so that the fermentation may be uniform. It is best done on a bread board, although often done in a mixing bowl. The dough should be kneaded until it is a smooth, plastic, even grained mass. The motion is hard to describe, but much depends on having the kneading thoroughly and properly done. Use as little extra flour as possible. Deftness rather than strength counts in the process. If you can pull the dough out long, and it springs back to the hand, it is good.

The Rising.—In setting dough to rise, the rule is that it should rise till its size is a little more than doubled. It is best to cover it with several thicknesses of cloth and a tight fitting cover; this will keep out the air and prevent a thick crust from forming, which will not mix well with the dough when it is kneaded, and will cause streaks or spots in the bread. Grease the bowl in which the dough is set to rise.

Care should be taken in rising bread that it is kept warm in cold weather; but not too hot, as that induces the acetous fermentation instead of the vinous, and the dough sours; about 70° to 80° is right. Old bread makers preferred a slow rise, which they said made a sweeter bread, but later scientific developments

point towards a quick rising as the best, because yeast being a plant which lives and dies, by quick fermentation the plant is living when the bread is ready to bake, but by the slower process only the dead spores are left. To hasten the process of rising use plenty of yeast, but do not keep it too hot. The less yeast used however, the sweeter the bread will be, because the yeast consumes the sugar in the dough, and the more yeast used the more sugar will be consumed. Bread keeps better, especially in hot weather, if no milk is used in the mixing; a bit of butter or a little lard may be added to the warm water used in mixing the bread, which will give it the necessary "shortness" when the milk is omitted. When the dough is molded and placed in the pans, allow for its doubling in size before baking—that is, make up the loaves to half fill the pans. It should be placed in the oven before the pans are quite full of the risen dough, for it rises a little after being put in the oven.

The Bread Pans.—The brick-shaped sheet-iron pans are preferable to any others, both in shape and material. Round loaves do not cut in equal sized or symmetrical slices, and the untinned iron pans are better conductors of heat than those bright with tin. Grease the pan lightly before putting in the bread. The bread should not be made in too large loaves, as it is not so sure of being done in the center; besides, the smaller loaves furnish slices of convenient size without breaking, or cutting in 2 parts, as is sometimes done when the loaves are very large; the medium-sized pans or small ones are the best. A loaf is of better shape if molded in 2 parts, which after baking come out of the pan as a single loaf. One long loaf will be smaller at the ends, and will not cut in nice slices, unless the dough is pulled out quite long, and filled in at the ends of the pans.

The oven should be well heated, and a steady fire maintained during the process of baking. An old rule for the heat of the oven, for bread and most baking, was to have it so that you could "hold your hand in it while you counted 12, but no longer," but the sensitiveness to heat in different individuals varies and a much better test is to throw a tablespoon of fresh flour on the oven bottom. If, after a few seconds the flour remains white, the temperature is too low and should be increased. If it burns black quickly, takes fire, or assumes a dark brown color, the oven is too hot and must be cooled. If it turns a blackish or brownish yellow, and looks slightly scorched, the oven is right. If the oven gets too hot and there is danger of burning the bread, put a dish of hot water in the oven, and the steam will prevent its scorching; it is better, however, to carefully regulate the heat so that this will not be necessary. The right temperature of the oven for baking bread is from 400° to 450°.

Baking the Bread.—Medium-sized loaves should have from $\frac{3}{4}$ to 1 hour's time for baking, and should turn out of the pan of a yellowish brown color on the top, bottom and sides of the loaf. One test is to thrust into the loaf a straw taken from the broom; when it is pulled out, if it is clear from dough the bread is done, but if it is sticky the bread should be baked longer. Or, if the loaf is baked in 2 parts, break them apart, and press with the finger where broken; if clammy it is not done and must be baked longer, but if elastic it is done. If on opening the oven door you are met with a cloud of steam which quickly passes away, in all probability the bread is done. Bread should reach the temperature of boiling water, (212°) clear to the center, but when carelessly baked, even when burned on the outside, it sometimes does not do so; in such slack-baked bread the yeast germs are not all killed, and the bread is not wholesome. In putting the pans into the oven leave space enough between them so that the heat can freely circulate around each one. When turned out of the pan, if the sides of the loaf look white, while the top and bottom crust is of a good color, turn the loaf so that one side will come at the top and the other at the bottom of the pan, return it to the oven and finish browning the sides; if this is not done there is danger that the loaf will be doughy in the center. An oven too cold will allow the bread to rise too much, and cause it to run over the sides of the pans, which detracts from the flavor of the bread. If the oven is too hot it crusts over the top of the loaf and causes it to crack at the sides; it will also crack at the sides if it has not sufficiently risen in the pan before putting it in the oven. Remember then, that bread should be thoroughly baked, for slack-baked bread is both unwholesome and unpalatable; and also that bread which "doughs" in the mouth will "dough"

in the stomach, and hence is very indigestible, because it becomes a sticky mass which the digestive fluids do not readily penetrate.

After the loaves are baked put them where the air can freely circulate around them, thus cooling them quickly and carrying away any gas remaining about them; do not leave them in the pans. A fine wire frame is sometimes used to set them on; or turn the pan bottom upward and place the loaf on it, bottom upward also. Do not wet the crust or put a wet towel over it; a little butter or lard may be rubbed over the crust if preferred, but the moisture from the cooling bread will soften the crust sufficiently, and the bread keeps better to be cooled quickly. A thin dry cloth may be thrown over if there are flies about. The best bread cloths are made from coarse table linen. Do not use them for anything else, and keep them scrupulously clean.

Bread keeps best in a tin box with a cover which shuts down tightly to keep it from drying out quickly. It must be thoroughly cold before putting it in the bread-box, or it will not keep well, and besides the steam from the bread will cause the box to rust—two things to be carefully avoided. Do not wrap bread with a cloth while in the box, as it is then more apt to mold. If the box is rusty, put a plate or platter in the bottom of the box for the bread to rest on. If hot bread is put on a wooden table, spread on a cloth before doing so, or the part of the bread which touches the table will sweat and absorb the odor of the wood.

Heat the knife when cutting either warm bread or cake, as it then cuts much smoother.

The Bread-Box and Remnants.—On the day of baking, while the bread is cooling, take all the old pieces from the box, wash, scald, and thoroughly dry it, and let it stand in the sun, if possible, until the bread is ready to go into it. If there are pieces of old bread left, use them in some way, by making them into toast; or, if not enough for that, put them on a tin and dry them in the oven, roll fine, and use them in puddings, griddle-cakes, croquettes, or in escaloped or gratinated dishes. Do not allow a particle of the old bread to go back into the bread-box with the new; put it under a pan to keep from drying until it is time to use it. It is a good plan to dispose of every particle of old bread before beginning on the fresh.

Eating Hot Bread.—Bread made with yeast is indigestible when fresh from the oven, or on the day it is baked, because it is full of moisture and the starch is held together in masses which are impenetrable to the saliva, and when chewed by the teeth it forms into leathery, poreless masses, which lie in the stomach like lead; it ripens, however, after being kept a day, and then the particles of the bread separate more easily, so that the digestive fluids can more readily come in contact with every portion of them. Hot yeast bread, rolls, biscuit, or muffins should never be eaten by persons of weak digestion, or by those who suffer from dyspepsia. Some people find bread indigestible which is in the least sour; a little lime-water (a teaspoon for each loaf of bread) is sometimes used in mixing the bread; the lime-water being an alkali, neutralizes any acid which is generated during the process of fermentation. Soda is also sometimes used to correct the sourness in bread, but sourness can easily be avoided by proper care, and that is much the better plan.

Mixing Different Flours.—A mixture of $\frac{2}{3}$ wheat or rye flour and $\frac{1}{3}$ cornmeal makes a bread quite as nutritious as either all wheat or rye bread, and more digestible, because the lessened quantity of gluten makes it less adhesive and more readily penetrated by the gastric juices.

Using Cornmeal.—In most dishes made with cornmeal the addition of about 25% of wheat flour increases the adhesiveness of the mixture, and is an improvement.

Baking Powder Bread.—If bread runs short, a tin of baking-powder biscuits or a baking powder loaf of bread can be quickly made, and, unless it is eaten too hot, there is no danger of dyspepsia, as bread and biscuits made in this way easily separate into particles. This can be readily demonstrated by putting a slice of each kind of bread on a platter and wetting them with cold water; the yeast bread can be taken up whole from the water, while that made with baking powder falls apart immediately. The baking-powder bread is more digestible because it thus separates more readily into particles, so that the digestive fluids can easily

attack every part, while the other forms a solid, nearly impenetrable mass in the stomach. Other advantages of baking-powder bread are that none of the starch in the flour is consumed by the baking powder, as is done by yeast, and there are certainly no yeast germs in the bread when eaten.

Using Pastry Flour.—It is a generally safe rule to use pastry flour whenever baking powder is used, and patent flour with yeast. A mixture of $\frac{1}{2}$ spring wheat or pastry flour, and $\frac{1}{2}$ winter wheat or patent flour, gives good results in yeast breads, and by many is preferred to the patent flour alone.

Prepared flour, which has the baking powder already mixed with it, can be obtained at grocery stores, or a quantity can easily be prepared at home and kept on hand for use. The proportion is $2\frac{1}{2}$ to 3 teaspoons of baking powder to the quart of flour, taking care that it is well sifted in.

Adding Sugar and Potatoes. In fermented bread it is best to add a little sugar - not enough to produce a very sweet taste, but merely enough to replace that which is decomposed by fermentation, and so restore its natural sweetness. Some people object to using sugar, but for the foregoing reason it is probably better to use a little. Adding potatoes to bread dough, which is sometimes done, is unnecessary with the best grades of flour, but with the inferior grades it improves the bread.

THE PRINCIPLES INVOLVED.—As the making of bread is the most important method of cooking grain food, let us examine the process a little and find the principles involved. Grinding the grain removes the indigestible bran, and by reducing it to a powder it vastly increases the surface exposed to the action of the water and yeast. The water when added causes the expansion of the starch cells, and it also gives an agreeable consistence to the bread after it is baked. Each grain of flour should be surrounded by a thin film of water; a white, powdery kernel of unmixed flour is sometimes seen in bread when this is not done.

Adding a little salt not only causes the dough to rise better in the oven, but probably it enables the albuminous matter to set more readily, and thus helps to prevent the inflated dough from collapsing before the baking is complete. It also acts as a condiment and supplies the system with hydrochloric acid and soda which are insufficiently supplied by natural foods.

In leavened bread the dough is subjected to fermentation before it is baked, by introducing leaven or yeast. The yeast cells, which are very much smaller than the grains of flour and are dissolved in the water or milk, should be brought into contact with every part of the flour, and by the kneading, a small quantity of air is introduced which favors the subsequent fermentation. When the yeast is well mixed in, the action of fermentation is set up equally in all parts of the mass, but, if not well mixed, there will be an accumulation of gas in some places, and little or none elsewhere. After introducing the yeast the dough is set aside to ferment and it is put in a warm place because moderate heat stimulates the process—about 70° to 80° is right. During the process of fermentation millions of small bubbles of carbonic acid gas are generated, and these bubbles permeate the mass. These bubbles of gas, being very light, naturally rise, but they are held in by the tough, elastic and sticky gluten, and so they lift the whole mass and cause it to "rise" or increase in bulk. If it was not for this adhesive gluten, the gas would readily escape without lifting the bread, and it is because cornmeal and oatmeal lack gluten, and so are not "sticky" enough, that they do not make good bread. To have good bread, it should undergo 2 fermentations, (1) the *saccharine* (or sweet) fermentation, and (2) the *vinous*. It will smell a little like foaming beer in this stage. A third, or *acetous* fermentation would follow, but it should never be allowed to reach this stage. Should this happen, it can be remedied by adding 1 teaspoon of soda for each qt. of water or 4 qts. of flour used, because soda being an alkali, will neutralize any acid which has been generated, but the bread will not afterward be as healthful or nutritious. Bread raised but *once* is coarse of grain but sweet to the taste. The risen dough is baked in an oven at a temperature varying between 320° and 572°; the alcohol and carbonic acid gas are expelled, the yeast germs are (or should be) destroyed by the heat, and various chemical changes are effected. The starch granules are mostly ruptured and intimately connected with the gluten, a portion of the starch near the surface is converted into *dextrin*, and a little *caramel* is usually produced. It is this conversion of the starch into dextrin which makes the crust more easily digested than the center—a fact which some people do not understand. This turning of the starch to dextrin is the same thing which takes place when bread is toasted, as we have explained under toast. More of the starch is turned to dextrin in the crust than in the center because it is heated more. The evaporation of the water inside the loaf while baking, keeps down the temperature there to about 212°.

Sometime before the cooking is complete the generation of carbonic acid gas will stop, but by that time a hard crust should be formed which will prevent the dough from falling. Flour mixed with water and baked, without being made to "rise" by using yeast or baking powder, would be solid and almost impenetrable by the digestive fluids, and therefore very indigestible, but the expansion caused by the carbonic acid gas separates the particles of gluten, and leaves the bread full of little holes, into which the digestive fluids readily enter, and so attack the bread in every part.

It will be seen that, as a result of the foregoing processes, bread differs in many important respects from the flour from which it is made. In leavened bread the albumen is coagulated, the starch cells are ruptured; a portion of the starch is turned to sugar, and part of that is decomposed into carbonic acid gas and alcohol, and part is turned to dextrin and maltose, and a little caramel is often produced. The alcohol generated by decomposing the sugar is all evaporated before the bread is fully baked.

YEAST.

Three Hour Yeast.—Take 1 cup of flour, $\frac{3}{4}$ cup of sugar, 3 tablespoons of salt; pour over this 1 pint of boiling water; let it cool, then add 1 cup of hop yeast. After this gets light, take 3 qts. of mashed boiled potatoes, and 3 qts. of warm water and add to the other. It will be ready for use the next day. Then 1 qt. of this yeast and 1 qt. of warm water will make 6 loaves of bread. With this yeast, bread will rise in 3 hours and the bread can be baked the same day, which is quite an advantage.

Hop Yeast.—Take 1 qt. of water, steep a small handful of hops in it, and when it has boiled for a few minutes strain this water on 6 grated potatoes; then boil them until clear, say 20 minutes, stirring all the time; if the potatoes are large, and the paste becomes too thick, add a little more water; while it is boiling, stir in $\frac{1}{2}$ cup of sugar and a tablespoon of salt; when it has cooled so that it is lukewarm, add a teacup of yeast; let it rise over night, then stir it down, and put in the yeast jar; cover tightly and set it in the cellar. This yeast usually keeps 2 weeks in hot weather, and longer in cold. A coffee-cup of this yeast, and 2 qts. of warm water or milk, with a little salt, and lard or butter, will make 6 or 8 loaves of bread, according to the size of the pans.

Potato Ball Yeast.—Take a pint of finely mashed boiled potatoes and have it as dry as possible; add 2 tablespoons of sugar, and 1 tablespoon of salt. Soak 1 fresh yeast cake in as little water as possible, and when the potato is cool add the yeast; mix thoroughly, and set it in a cool place for 2 or 3 days. When you wish to set bread to rise, have about as much fresh mashed potato, with sugar and salt added, as you took at first; mix this thoroughly with the first, then divide it in half; roll up one half in a ball for the next baking; add the other half to water sufficient for sponge for the bread.

Milk Yeast or Rising.—Take 1 pint of new milk; in the morning add $\frac{1}{2}$ teaspoon of salt; stir in, and beat for $\frac{1}{2}$ minute, 2 tablespoons of flour; then place the pitcher in a kettle of warm water, and where it will keep warm, but not *hot* (about 110°). It takes about 5 hours for it to rise. Instead of milk, water is sometimes used, and then it is called salt-rising. Mix the rising with a quart of warm water and a little salt; make a stiff sponge, and let it rise again; then mold and put in the pans to bake.

Yeast Cakes.—Take common home-made yeast, and when the fermentation ceases stir in enough cornmeal to make a dough. Roll out, cut in squares, and dry thoroughly. Do not dry in the oven as the heat will kill the yeast germs; choose a dry day to make them, and dry in the shade rather than in the sun. Keep them where it is shady, but where the air circulates freely; they will keep indefinitely.

On examining yeast under a microscope it is found to consist of a collection of small oval cells, of a vegetable nature, known as yeast cells, or yeast plant. It is really a living plant, and if this was well understood many mistakes in its use could be avoided. Extremes of heat and cold kill it, and an unfavorable temperature will check its active growth, even though it may not be hot or cold enough to kill or prevent its growing in future under more favorable conditions. The better the food suits the yeast the faster it grows. Rough usage will also prevent its growth. Under favorable conditions it grows very fast, as much as will lie on a 25 cent piece will fill a cup in 1 or 2 hours. Given a little good yeast and any amount more can be grown. People talk about *keeping* yeast, but it is only kept as one year's corn is kept to be sown for the next year's crop. Yeast as it grows converts into sugar some of the starch with which it comes in contact, and this sugar it decomposes into alcohol and carbonic acid gas, and it is to this action that it owes its value, because the carbonic acid gas thus formed will permeate the mass and cause it to "rise." The yeast plant can live in a temperature ranging between 30° and 170°, but it thrives best between 70° and 80°. Good yeast is yellow, or greyish-yellow in color; the more brown it is the more dead germs there are. A blue line sometimes appears; it is due to mold, and bread made from such yeast will soon become moldy. Yeast with a pungent odor, and which is

foamy and full of bubbles is good; if it has an acid odor and looks watery it has spoiled. Potato starch is the best for the growth of the yeast plant, and old potatoes are preferable to new for the reason that there is more sugar in them. If all the starch cells in the flour or potato used are broken by boiling, the yeast acts on them more readily.

Salt and sugar are added to aid the fermentation. The office of hops or ginger when used is to keep the yeast from souring, which they do by stopping the fermentation before all the sugar is decomposed into alcohol, and if too much is not used they give it a pleasant flavor. Tin or iron vessels may turn the yeast dark, but this can be prevented by mixing with a wooden spoon in an earthen vessel, and boiling the potatoes and hops in a non-metallic kettle, either granite or porcelain lined. Of the 3 kinds of yeast in common use—*liquid*, *dry* and *compressed*—each has its advantages, and any kind is good which makes good bread.

BAKING POWDER.

8 ounces cream of tartar.

4 ounces baking soda.

4 ounces of corn-starch.

Powder the ingredients and sift them together several times, as the chief danger of failure lies in not having them well mixed. This baking powder will do all that can be done by any baking powder on the market. The U. S. Department of Agriculture has *fully tested* and *recommends* this powder, their chemist saying in his official report: "The consumer can pay full retail price for the ingredients and still make it up for about $\frac{1}{2}$ the price at which a good baking powder is sold, and if she makes sure of the quality of her cream of tartar, she will have an article of which the purity is assured.....I can see no reason why all housekeepers should not make their own baking powder."

Baking powder should always be mixed with the flour before adding the other ingredients.

The action of baking powder consists in the fact that when wet with water the alkali (soda) and the acid of which it is composed will effervesce, and in so doing will give off carbonic acid gas; this operates in the same way as the gas generated by yeast—that is, it permeates the mass of dough and causes it to "rise" or swell up. The action of the baking powder will soon be over, however, and if the bread or pastry is not baked at once, the gas which it generates will escape, the dough will settle down in a solid mass, and the whole value of the powder will be lost. To succeed when using baking powder or soda 2 things are essential: (1) The baking powder (or soda and cream of tartar) must be thoroughly and perfectly mixed with the flour. (2) After the raising agencies have been wet so that they begin to work, push the operation rapidly to completion; and when all is ready bake without delay. After the soda and acid are mixed to form the baking powder they do not act on each other as long as they are kept dry; the only reason for adding starch or flour is to absorb moisture and keep them dry. As soon as they are wet the action begins. Baking powder can be made by using only $\frac{1}{2}$ as much starch as we give in the above formula, or with even less; the powder will then be a little stronger, but it will not keep as well, so that for ordinary use we prefer the proportions there given. If you cannot get *pure* cream of tartar use tartaric acid instead, as that is less often adulterated. It answers the same purpose, but use only $\frac{1}{2}$ as much. People as a rule will not tire of yeast bread as quickly as they will of soda bread, and inferior materials can be used with yeast better than with baking powder.

BREADS.

White Bread.—Take $1\frac{1}{2}$ quarts of milk and scald it till the top is covered with a thin skin, by setting it over a good fire in a double boiler; then pour it out and let it cool after adding 1 oz. butter; now add 1 cake compressed yeast dissolved in 1 cup lukewarm water. After it has cooled, add 1 tablespoon of salt, and about $1\frac{1}{2}$ quarts of flour, (or enough to make a good batter) and for 5 minutes beat energetically; then set it in a warm place to rise over night, covering it with a cloth. The next morning early, while it is still in the bowl, work in with the hand about 4 pints of flour (or enough to form a good dough); then take it out on to the bread-board and knead 15 or 20 minutes. Sufficient kneading is essential to the quality of the bread, so work it till the dough is soft and the gas thoroughly distributed through it. Then put it back in the bowl and set it in a warm place till it becomes quite light (about 3 hours probably). Shape into loaves and put into the pans, and bake when risen, pricking with a fork to let out any gas within the loaf.

Water Bread.—Mix together $1\frac{1}{2}$ quarts of bread flour and 1 teaspoon of salt; rub in 1 teaspoon of butter until fine like meal. Soak a whole yeast cake in $\frac{1}{2}$ cup of lukewarm water, and mix the liquid with the dry mixture; add enough more flour to make it stiff enough to knead, and, when well kneaded, place it in a bowl, cover it well, and set it to rise for 3 hours; then cut it down, shape into loaves, place in buttered pans, let it rise again, and bake about 50 minutes. If the bread is set to rise at night, use $\frac{1}{4}$ of a yeast cake, but as we elsewhere explain the latest investigations point to a quick rising as best.

Entire Wheat Bread.—Scald 1 pint milk, add $\frac{1}{2}$ cup sugar and 1 teaspoon of salt; after it has cooled, add 1 yeast cake dissolved in $\frac{1}{4}$ cup of lukewarm water, and $4\frac{1}{2}$ cups of fine granulated wheat; mix well with a broad knife or spoon, cover, and set it to rise for about 3 hours, or until it doubles its bulk; then cut it down, turn it into buttered pans, let it rise again, and bake about 50 minutes. Whole or entire wheat bread is mixed soft, or only stiff enough to handle with a spoon or knife. Entire wheat bread is more crumbly than white wheat bread.

Entire Wheat Bread No. 2.—Take 4 even cups of entire wheat flour, and 1 cup plain white flour (before sifting), $\frac{1}{2}$ of a compressed yeast cake (dissolve it in lukewarm water), 1 tablespoon of butter (before melting), $\frac{1}{4}$ cup of molasses; stir in lukewarm milk and water to make it less stiff than for white bread; beat and stir, but do not knead it; turn into a greased baking-pan, let stand till light, and bake.

Entire Wheat Bread with Baking Powder.—Take 2 pints flour, 3 teaspoons baking powder, 1 saltspoon of salt; mix thoroughly, and then stir in 2 cups cold water; turn into a well greased baking-pan, and bake 1 hour.

Half and Half Bread.—A very nice bread is made by using 3 cups each of white flour and granulated or entire wheat flour; add the other ingredients and mix as directed in the last recipe.

Entire wheat is sometimes called graham, but is not exactly the same, as it has all the nutritive part of the grain without the silica in the bran, which is like powdered glass, and often irritates the stomach and intestinal canal. Always buy the best graham and entire wheat, as the cheaper grades may be siftings mixed with third rate flour. Before measuring entire wheat flour, sift it, not to remove the bran, but to make it lighter; if unsifted the measurements will not be accurate. If graham or entire wheat bread is moistened with molasses, do not set it to rise over night, for you will then surely have an acetous fermentation. As entire wheat flour is much more nutritious than clear white flour, its more extended use is very desirable.

MILK BREAD.

1 tablespoon sugar.
1 pint scalded milk.

1 tablespoon butter.
1 yeast cake.

1 teaspoon salt.
6 to 8 cups flour.

The amount of flour will depend on the kind used, or the amount of gluten in it, and it may vary from 6 to 8 cups. Use enough to make a suitable dough. Mix in the morning, and when light make into loaves, after kneading 15 minutes.

Baking-Powder Bread.—Sift together thoroughly 1 quart flour, 1 teaspoon salt, $\frac{1}{2}$ teaspoon sugar, and 2 heaping teaspoons baking powder. Then add enough water to make a stiff dough (about 2 cups, more or less, according to the flour) and stir it together quickly with a large spoon; then turn it immediately into a well-greased, brick-shaped baking-pan, and bake at once for $\frac{3}{4}$ hour in a hot oven, covering with paper the first $\frac{1}{4}$ hour, to prevent its crusting over too soon. Have the oven heated right before beginning to mix the bread, and have the pan greased and ready.

Once-Raised Bread.—Have the bread-bowl warm, if it is an earthen one, and the weather cold; put a piece of butter in it the size of an egg, and a tablespoon

of salt; then pour over it a qt. of hot milk and water; stir cold flour into it, until it is a batter that can be beaten with a spoon, and beat well for a minute; then add a cake of compressed yeast mixed with a little cold water. The batter at this time should be lukewarm; wait a little for it to cool if it is too hot, but the cold flour usually makes it just right; beat in the yeast another minute, then place a pan of flour on the back part of the stove, put both hands in it and stir constantly from the bottom of the pan, until the flour feels warm all through; then stir into the batter enough to make a stiff dough—cutting in the flour with the spoon—do not knead it; put a little flour on the top and press it down flat all around the spoon with the back of the fingers. Set the bowl or pan over a kettle or tin pail of hot water on the cooking table, cover with a cloth, and let it rise up light, which will be in 3 hours; stir down once, let it come up again, take it on the molding-board, with a little flour, and knead 10 minutes; make in 3 small loaves, let them rise to twice their former bulk, and bake nearly an hour. Bread mixed in this way, as late as 10 o'clock, will be out of the oven by 3 in the afternoon, making a delicious bread with little trouble.

Milk, or Salt-Rising Bread.—Early in the morning (the earlier the better) mix in a pitcher a pint of warm water, or $\frac{1}{2}$ water and $\frac{1}{2}$ new milk, with flour enough to make a thin batter. Put the pitcher in a kettle of warm water, and keep it at an even heat—about 70° to 80°. Cover the pitcher with a saucer, and in about 5 hours it will begin to rise, (not frothy, like hop yeast, but with very fine bubbles) then add 1 qt. of water with a little more salt, and mold in flour to make a soft dough, and put it in 3 brick-shaped baking-tins to rise. When it has risen to nearly twice its bulk in the pans, it is ready to bake. This bread requires great care in making, and much time. It gives off a disagreeable gas while rising, but that is all driven off in the baking, leaving a fine-grained, most delicious bread.

Buttermilk Bread.—Take 2 cups sour buttermilk, warm it, and add 1 cake of yeast and 1 teaspoon soda (scant); add 2 teaspoons sugar, 1 teaspoon salt, 1 tablespoon butter and form to a soft dough with warm flour; knead well, let it rise, knead again, put in greased tins, let rise and bake.

BROWN BREAD.

2 cups cornmeal.	1 cup rye meal.	1 cup Graham flour.	1 cup molasses.
1 cup milk.	1 cup water.	1 teaspoon soda.	A little salt.

Bake 2 hours in a covered tin.

BROWN BREAD NO. 2.

2 cups sweet milk.	2 cups sour milk.	4 cups cornmeal.	2 cups flour.
1 cup molasses.	$\frac{1}{2}$ cup sugar.	2 teaspoons salt, scant.	2 teaspoons soda.

Steam 3 hours, and bake $\frac{1}{2}$ hour.

BROWN BREAD NO. 3.

3 cups sour milk.	$\frac{1}{2}$ cup molasses.	1 cup graham flour.
2 cups cornmeal.	1 teaspoon soda.	A little salt.

Steam 3 hours and bake $\frac{1}{2}$ hour. If the milk is very sour, use $\frac{1}{3}$ sweet milk.

BROWN BREAD NO. 4.

1 cup sour milk.	$\frac{1}{2}$ cup molasses, scant.	2 tablespoons brown sugar.
2 cups graham flour.	$\frac{3}{4}$ cup wheat flour.	1 large teaspoon soda.
1 teaspoon salt.		

Steam 2 $\frac{1}{2}$ hours, and bake $\frac{1}{2}$ hour in a slow oven.

Boston Brown Bread.—Take 1 cup each of cornmeal, rye meal and graham meal; mix all three together; mix in 1 cup molasses, 3 cups rich sour milk, 1 deserts- spoon soda, 1 teaspoon salt. Put it in a covered pail, leaving room for it to rise,

set it in a kettle of cold water, putting a ring under the pail to keep it from burning; boil 4 hours, and do not once let the water stop boiling, and do not remove the cover till done. Excellent.

Boston Brown Bread No. 2.—Take 2 cups cornmeal, and the same of either rye or graham flour; sift together with 1 teaspoon salt; add 1 cup molasses, $\frac{3}{4}$ cup sour milk or cream, 1 teaspoon soda (dissolved in a little boiling water); mix all well and add $2\frac{1}{2}$ cups cold water; pour into a well-greased pan and steam 4 hours. It will look thin when ready to steam, but will come out all right.

Corn Bread.—Warm 1 pint of milk, stir in enough cornmeal to make a thin batter, add $\frac{1}{2}$ cup shortening, 3 eggs, 1 heaping teaspoon of baking powder; heat the tins it is to be baked in, and bake quickly. It is splendid, and bakes promptly. As a rule corn bread requires a longer time to bake than either graham or wheat bread.

Corn Bread No. 2.—Mix $\frac{1}{2}$ cup cornmeal with 1 cup white flour, and add 1 teaspoon salt. Beat together till light, 1 egg and 2 tablespoons sugar; add 3 tablespoons melted butter, and $\frac{3}{4}$ cup sweet milk; then stir in the above flour mixture, beat smooth and add 2 teaspoons baking powder. Put into greased pans, and bake $\frac{1}{2}$ hour in a moderately quick oven.

Steamed Corn Bread.—Take 2 cups sour milk, 2 cups cornmeal, $\frac{1}{2}$ cup white flour, 4 tablespoons molasses; 2 teaspoons soda, a little salt; steam $1\frac{1}{2}$ hours, and bake $\frac{1}{2}$ hour.

WHITE CORN BREAD, SOUTHERN.

2 cups white cornmeal.
1 cup white flour.

1 tablespoon baking powder.
1 teaspoon salt.

1 teaspoon sugar.
Butter size of an egg.

Use milk or water to make a soft dough; bake in a loaf, or if preferred, in shallow baking-tins.

Kentucky Egg Corn Bread.—Take 2 pints cornmeal, 3 cups buttermilk, 1 or 2 eggs, 1 teaspoon soda (scant), 1 teaspoon salt, 1 tablespoon lard; mix well, and bake quickly.

Rice Bread.—Boil 1 lb. rice till tender in water or milk (milk is best) and mash it; then with the hands, rub the rice into 4 lbs. flour, in the same manner that butter is rubbed in, mixing it thoroughly; add 3 teaspoons sugar, 1 tablespoon salt, and 1 cake compressed yeast dissolved in 2 pints lukewarm milk or water; have the dough soft to the touch, knead thoroughly, and let it rise; then knead again thoroughly, form into loaves, put into greased pans, let rise, and bake in a good oven. Excellent, especially if made with milk.

Carolina Rice Bread.—Take 3 well-beaten eggs, add 3 cups sweet milk, 2 cups white cornmeal, $\frac{1}{2}$ pint cold boiled rice; 1 tablespoon butter, melted, 1 teaspoon salt; beat together well, and add 1 tablespoon baking powder; mix all thoroughly, put in greased pans, and bake $\frac{1}{2}$ hour.

GRAHAM BREAD.

3 cups sour milk.
2 teaspoons soda.

1 teaspoon salt.
1 cup molasses.

1 egg.

Graham flour to make a stiff dough; bake slowly.

Graham Bread No. 2.—Make a stiff batter of 1 cup warm water thickened with graham flour; add to it $\frac{1}{3}$ cup of yeast, let it rise over night; in the morning add a small piece of butter, $\frac{1}{2}$ cup sugar, and wheat flour to mold; put it in well greased pans, let it rise, and bake slowly 1 hour. Graham bread bakes slower than white bread.

Gluten Bread.—Scald 2 cups milk and add, when lukewarm, 1 teaspoon salt

and $\frac{1}{2}$ cup good yeast; make it to a thick batter by adding gluten flour, and beat thoroughly; add the well beaten whites of 2 eggs, and enough flour to make a soft dough. Knead (without adding more flour), let stand until light; turn into well greased pans, let rise again, and then bake in a moderate oven $\frac{3}{4}$ hour.

Oatmeal Bread.—Boil 2 cups oatmeal as for porridge, add $\frac{1}{2}$ teaspoon salt, and when cool, $\frac{1}{2}$ cup molasses, and $\frac{1}{2}$ a yeast cake or $\frac{1}{2}$ cup yeast; stir in enough wheat flour to make as stiff as it can be stirred with a spoon; put it into 2 well greased tin pans, and let stand in a warm place till very light; bake about $1\frac{1}{4}$ hours. This will make delicious thin slices; butter each slice before cutting it from the loaf, and then cut as thin as possible with a very sharp knife. Do not cut till the day after it is baked.

Rye Bread.—Bread made of bolted rye flour is made in the same manner as white wheat bread; that made from rye meal is made according to recipes for Graham bread. Rye bread is often made with 4 parts rye flour, 1 part cornmeal, and a handful of wheat flour. It should bake 2 or 3 hours in a slow oven; or steam it 2 hours, and then bake 1 hour.

Squash Bread.—Take 1 cup stewed and sifted squash, and mix in 2 table-spoons of sugar and 1 teaspoon salt; melt 1 tablespoon butter in $1\frac{1}{2}$ cups scalded milk, and when lukewarm, add $\frac{1}{2}$ cup yeast, and flour enough to knead; knead $\frac{1}{4}$ hour, let rise till light; knead again, put it into greased tins, let rise again, and bake.

Utilizing Stale Bread.—(1) Bread crumbs can be utilized in so many ways that every piece of stale bread and the ends of loaves should be saved and prepared for use in the various dishes which call for bread crumbs: (2) Put the stale bread on a baking-tin, and set it on the shelf in the oven where it will dry and slightly brown; when thoroughly crisp, place it on the molding-board, roll it finely, and keep it in a jar well covered. These are *dried bread crumbs* and should not be used for scalloped dishes or bread puddings, as they absorb so much moisture. (3) Stale bread crumbs can be made into griddle cakes; or used in an omelet; or used with stewed tomatoes, and in many ways.

Steamed Stale Bread.—When bread or biscuit become very dry they may be steamed a few minutes, which will make them very palatable. Stale pieces can be freshened by dipping them in water, and putting them for a few minutes in a moderately hot oven. A stale whole loaf can be freshened in this way without first dipping in water, although many cooks are not aware of it; for this purpose the oven should not be too hot—say 260° to 300° is best. The steam which is generated opens out the pores which had shrunk together. Or put a stale loaf in a deep pan, cover with another pan, and set in a moderate oven 20 minutes; then take from the pan and set on end to cool; it will cut like a fresh loaf.

BISCUITS.

Baking-powder Biscuits.—Have the oven hot to begin with, then rub a piece of butter the size of an English walnut into a cup of flour, and butter your baking-tins. Next put a level teaspoon of salt, and 2 heaping teaspoons of baking powder in the flour, and stir it well. Up to this time you can work leisurely, but from this onward, work as fast as you can “fly.” Add a cup of sweet milk, stir it, and add enough more flour to make a soft dough; take it out onto the molding-

board, and form it quickly into a round mass; cut it in 2 parts; then 4, then 8; give the pieces just a roll in the floured hands, put it in the tin, and bake 8 or 10 minutes. The oven should brown them top and bottom in that time. Everybody likes them.

Cream Biscuit.—To 1 quart of flour use 2 teaspoons baking powder, a pinch of salt, and rich sweet cream to make a soft dough. Bake in a quick oven.

Beat Biscuit.—Take 2 quarts flour, 1 teaspoon salt, 1 tablespoon of butter and 1 tablespoon of lard rubbed in the flour; mix to a stiff dough with water. Beat with the rolling-pin until perfectly light, turning and folding as you work; do not cut the dough, but break off pieces and form into little biscuits, and bake in a quick oven.

Entire Wheat Beat Biscuit.—Take 1 quart whole wheat flour, 3 rounded tablespoons lard, 4 tablespoons sugar, 1 teaspoon salt, 1 cup each of water and milk; mix thoroughly, lay it on the molding-board, and beat with the rolling-pin until it ceases to be sticky; roll out, cut into biscuits (be sure and thoroughly prick each one), and bake $\frac{3}{4}$ hour in a moderate oven.

For Wafers take some of the dough so prepared, roll thin, butter it, beat again, roll very thin, cut out, and bake.

Raised Biscuit.—Set a sponge of 2 cups milk, a little salt, and $\frac{1}{2}$ cake compressed yeast, and let rise; beat butter the size of an egg with 2 tablespoons sugar and 1 egg; stir them into the sponge, adding flour to make a stiff batter; stir well, let it rise, and when light, take dough enough with a spoon for each biscuit, work lightly into shape, put in a pan, let rise, and bake.

Milk Biscuit.—Rub $\frac{1}{2}$ lb. butter and 1 saltspoon of salt into $2\frac{1}{2}$ lbs. flour; add 1 cup yeast and enough boiled milk (have it lukewarm when used) to make a tolerably stiff dough; knead well, let it rise over night, knead again in the morning, put into greased tins, let rise, and bake in a quick oven.

Buttermilk Biscuit.—Sift 4 cups flour, add 1 teaspoon soda, $\frac{1}{2}$ teaspoon salt, and rub in 1 tablespoon lard, and 1 tablespoon butter; make into a soft dough with buttermilk, roll out, cut out, and bake quickly.

Drop Biscuit.—Take 1 cup milk, 1 level teaspoon salt, 1 tablespoon baking powder stirred into 1 cup flour; beat all together, and add enough flour to make a stiff batter. Drop in spoonfuls on a buttered tin, and bake quickly in a hot oven.

Drop Biscuit No. 2.—Take 1 quart flour, add 1 tablespoon sugar, $\frac{1}{2}$ teaspoon salt, 3 heaping teaspoons baking powder, and milk sufficient to form a stiff batter. Drop in spoonfuls on a buttered tin, and bake in a very quick oven.

Shortcake Biscuit.—To 4 cups flour use 1 large tablespoon butter, a little salt, 3 teaspoons baking powder (heaped), and milk enough to roll out as soft as possible.

Soda Biscuit.—Into 4 cups sifted flour sift 1 teaspoon soda, 2 teaspoons cream tartar and 1 teaspoon salt; rub in with the hand 1 tablespoon lard or butter; make it into a soft dough with sweet milk.

Graham Biscuit.—Use 2 cups graham flour, 2 cups wheat flour, 1 tablespoon butter, 2 tablespoons molasses, 1 teaspoon soda, 2 teaspoons cream of tartar (or 3 teaspoons baking powder instead), a little salt; sift the last 3 ingredients into the wheat flour, add the graham flour, rub in the butter thoroughly, moisten with milk or water to make a dough just stiff enough to roll out; roll thin, cut in small cakes, and bake in a quick oven. Double this recipe if the family requires it.

Tutti Frutti Biscuit.—Mix bits of fruit liberally into the dough of common

soda biscuit before baking it, as fruit is put into cake; very nice. Tea rolls are nice with fruit put in in the same way.

BUNS, RUSKS, ROLLS, ETC.

BUNS.

Plain.—Use 1 quart flour, 1 large cup warm milk, $\frac{1}{4}$ cup butter or lard, $\frac{1}{2}$ teaspoon salt, $\frac{1}{2}$ cup sugar, $\frac{1}{2}$ a grated nutmeg, $\frac{1}{2}$ a yeast cake (or $\frac{1}{2}$ cup yeast), 2 eggs; dissolve the butter in the milk, beat the eggs separate, add all to the flour; the dough should be very soft; knead well, let rise over night, and in the morning break into pieces the size of a large egg, work them into rather flat cakes, put them on a buttered pan, about $\frac{1}{2}$ inch apart, let rise to double size, then cut a cross on top of each bun (not too deep) with a sharp knife, and bake in a moderate oven about 25 minutes.

English Buns.—Use $\frac{1}{2}$ teacup butter rubbed into 1 pint flour, $\frac{1}{2}$ cup sugar, $\frac{1}{2}$ cup Zante currants washed and dried, 1 level teaspoon salt, 2 cups new milk, $\frac{1}{2}$ cup good yeast; mix all together, and add enough flour to mold into a soft dough, let rise till light, mold down again, keeping the dough as soft as possible, roll out, and cut with a biscuit cutter. Let them rise till very light in the baking-tins, and bake until they are a nice yellowish brown on top and bottom. Brush them over to glaze with a little sugar and milk mixed, and return to the oven till the glazing dries.

Cinnamon Buns.—Rub $\frac{1}{2}$ teacup butter into a coffee cup of flour; add a little salt, and a heaping teaspoon of baking powder; then add a coffee cup of sweet milk, and enough flour to roll out into a large thin sheet. Spread with soft butter, sprinkle with sugar and cinnamon, roll up, and cut into buns. Bake about 20 minutes.

RUSKS.

Plain.—Into 1 quart of flour rub a piece of butter the size of a large egg; beat 2 eggs well, add 2 cups warmed new milk, flavor with a little cinnamon, and add $\frac{1}{2}$ teacup of fresh yeast; mix thoroughly with the flour, but do not mold; let it rise, and add a little more flour if too thin to mold, cut in pieces the size of biscuits, knead each one separately, place in a buttered pan, let rise till quite light and bake.

Baking Powder Rusk.—Sift 2 tablespoons sugar, $\frac{1}{2}$ teaspoon salt, and 1 tablespoon baking powder into 3 cups flour, and then rub in 2 tablespoons cold lard; add 2 well-beaten eggs, 2 cups sweet milk, 1 teaspoon each cinnamon and nutmeg extract; mix into a dough soft enough to handle, and turn out on the molding-board; turn quickly once or twice to smooth it, break off pieces about the size of an egg, roll into small balls with the hand, and lay close together in a well greased baking-tin. Wash over the top, to glaze it, with a little milk and melted butter mixed; bake $\frac{1}{2}$ hour in a moderate oven. Sift fine white sugar on top when cold.

BRIOCHES.

Dissolve $\frac{1}{2}$ a yeast cake in $\frac{1}{2}$ teacup of lukewarm water; mix with enough flour to make a thick sponge, cover with a cloth, and let rise in a warm place till it doubles in bulk; then add $\frac{1}{2}$ teacup milk, 5 eggs, 1 saltspoon salt, and $\frac{1}{2}$ lb. dissolved butter; beat all together well, add flour to make a dough, and let rise again 1 to $1\frac{1}{2}$ hours; then turn on to the molding-board, flour as little as possible, and roll the sides over into the middle several times. Then form into tiny

loaves, laying 1 flattened ball of dough on to a little larger loaf, making an indentation for it in the center of the lower one with the thumb. Brush over with white of egg, and bake in a quick oven.

ROLLS.

French Rolls.—Rub 1 ounce butter in 1 quart flour; mix in 1 beaten egg, a little yeast, and as much milk as will make a rather stiff batter; beat well, but do not knead, let rise, and then bake in tins. Very nice.

Coffee Rolls.—Take 1 quart of light dough, mix in 1 tablespoon of lard and $\frac{1}{2}$ cup of sugar; then roll thinner than biscuit, spread with butter, sugar and cinnamon, and sprinkle a little flour over. Roll up 2 turns and cut off, standing them on end in the tin; let rise, and bake in a quick oven.

Graham Rolls.—Mix 4 cups graham flour with enough milk to make a stiff batter; add $\frac{1}{3}$ cup good yeast and let rise over night; in the morning add 1 large tablespoon sugar, 2 eggs, butter size of an egg, $\frac{1}{4}$ teaspoon soda, and a little salt; put it in cups and let stand 20 minutes before baking.

Parker House Rolls.—Make a hole in 2 quarts of flour, and pour in 1 pint of milk which has been boiled and $\frac{1}{2}$ cup butter or lard melted in it and allowed to cool; add $\frac{1}{4}$ cup sugar, 1 teaspoon salt, and $\frac{1}{2}$ cup good yeast; let it stand over night without mixing; in the morning, mix and knead; let rise till after dinner, when knead again, roll $\frac{1}{2}$ inch thick, cut out, and let rise till baked. Bake about $\frac{1}{4}$ hour.

CRACKERS.

Plain.—Into 2 quarts flour rub well with the hand 1 cup butter, and 1 teaspoon salt; wet with cold water, beat thoroughly with the rolling-pin, and work in flour enough to make quite brittle and hard; then pinch off pieces, and if you want them to look like baker's crackers, roll each piece separately.

Corn-Starch Crackers.—Sift together 3 cups flour, 1 cup corn-starch, $\frac{1}{2}$ teaspoon salt, 1 tablespoon sugar, and 1 teaspoon baking powder; rub into this 1 tablespoon lard, and add 1 cup sweet milk, mixing it to a smooth dough; slightly flour the bread-board, turn out the dough, and get it into smooth and even form with as little kneading as possible; then spread a clean towel over it and let it stand 10 minutes. Then roll very thin with the rolling-pin, cut with the cutter, prick with a fork, and put them on a greased baking-tin; wash the top of the crackers over with milk, and bake 8 minutes in a very hot oven. These make a delightful accompaniment for salad.

Graham Crackers.—Sift 1 heaping teaspoon baking powder and 1 even teaspoon salt into 4 cups sifted graham flour; rub in $\frac{1}{2}$ cup butter or lard, and make into a stiff dough with sweet milk or cold water; knead 10 minutes, using white flour to prevent its adhering to the board; roll thin, cut in squares, and bake in a moderate oven.

GRAHAM DIAMONDS.

To 4 cups graham flour add 1 teaspoon salt, 1 teaspoon sugar, and pour on boiling water to scald thoroughly; work into a soft dough, roll out $\frac{1}{2}$ inch thick, cut into diamonds with a sharp knife, and bake 30 minutes in a quick oven, or till crisp.

JOHNNY CAKE, PONES, ETC.

JOHNNY CAKE.

Use 1 cup sour milk, 3 tablespoons molasses, 1 egg, $\frac{1}{2}$ teaspoon soda; add corn-meal sufficient to make a thin batter,

Johnny Cake No. 2.—Use 1 egg, $\frac{1}{4}$ cup sugar, a little salt, 1 cup milk, 1 teaspoon cream tartar, $\frac{1}{2}$ teaspoon soda, 1 cup cornmeal, 1 cup white flour; bake in a shallow pan in a quick oven.

Fruit With Johnny Cake.—Dried fruit, such as raisins, currents, etc., added to johnny cake, is a pleasant addition for a change.

CORN AND GRAHAM JOHNNY CAKE.

3 good cups cornmeal.	$\frac{1}{2}$ cup molasses.	1 quart sour milk (part of
2 good cups graham flour.	3 tablespoons melted butter.	which may be sour cream
1 good cup white flour.	2 heaping teaspoons soda.	if it is to be had).
3 eggs.	1 good teaspoon salt.	

SPIDER CAKE.

This, as the name implies, is baked in a spider, or short handled frying-pan. Beat 2 eggs very light, add 1 cup sour milk, and 1 cup sweet; stir into this 2 cups cornmeal, and a handful of flour, 1 tablespoon sugar, and 1 teaspoon each of salt and soda; mix, and beat thoroughly, and then pour it into the spider, which should be already hot and well greased. After the butter is in the spider, pour over it 1 cup sweet milk, but *do not stir it into the batter*. Bake in a hot oven $\frac{1}{2}$ hour. Take it from the pan on to a plate, being careful not to break it.

Rice Spider Cake.—Use 1 cup boiled or steamed rice, 1 cup yellow cornmeal (the granulated is best), 2 cups sweet milk, 1 tablespoon sugar, 1 tablespoon baking powder, and 1 level teaspoon salt; mix all thoroughly, and add at least a handful of flour. After beating in the flour, put the batter in a hot buttered spider, or short-handled frying-pan, and bake in a hot oven $\frac{3}{4}$ hour. The batter must be thin enough to "run" a little, but not as soft as for griddle cakes. If needed to make it thinner, when the flour is added, put in a little more milk; if too thin add a little more flour.

FLORIDA CORN CAKE.

1 egg.	1 teaspoon salt.	2 cups white cornmeal.
1 cup milk or water.	1 teaspoon sugar.	1 tablespoon baking powder.
1 tablespoon salt pork fat.		

Mix all thoroughly, and bake in 2 thin cakes.

Corn Pone.—Into 2 cups boiling meal mix 1 teaspoon salt and 1 teaspoon sugar; scald with 2 cups boiling water, and let stand till it swells and becomes lukewarm; then add a $\frac{1}{2}$ oz. cake of compressed yeast dissolved in a little cold water; if too stiff reduce it with warm water to a consistency sufficient to retain its form; then put it in the baking-pan, let rise 4 or 5 hours, and bake in a moderate oven till thoroughly done. Pone should be eaten fresh and warm, but is very nice toasted, after it is a day old.

Florida Pone.—Mix 1 tablespoon of baking powder and 1 teaspoon salt, into 2 cups of white cornmeal. Mix with sufficient water to make a thick batter, and beat in a tablespoon of hot salt pork fat. Make in a thin cake, and bake until well browned. Delicious with meat.

Hoe Cake.—Into a mixing-bowl put 4 cups white cornmeal and 1 teaspoon salt; make it to a stiff batter with hot water, stirring it all the time. Have a pan of cold water ready, moisten the hands, and then with the hands press a tablespoon of the batter into a round, thin cake. Bake on a griddle over the fire, or on an oak board before an open fire, thoroughly baking first one side and then the other. Pull apart when done, butter, and serve hot.

Baked Buckwheat Cakes.—Mix in the mixing-bowl $\frac{3}{4}$ cup buckwheat flour, 1 cup white flour, and 1 heaping teaspoon baking powder; add $\frac{1}{2}$ cup light brown sugar, 1 egg well beaten, and 3 tablespoons melted butter or lard; mix all together well, and add enough sweet milk to make a batter that will pour and

spread slowly, but not as thin as for griddle cakes; *bake* in a deep tin in a rather hot oven, allowing plenty of room for it to rise. Eat hot with butter. Try this once and you will be surprised at its quality. By using cornmeal instead of the buckwheat a fine corn cake is made.

Corn Dodgers.—Into a mixing-bowl put 1 pint white cornmeal; scald by adding just enough boiling water to moisten the meal; stirring it all the time; work in 1 tablespoon butter or lard, and when cool add 1 well-beaten egg, 1 teaspoon salt, and 2 tablespoons milk; mix well, put by spoonfuls into a large, well-greased baking-pan, and bake brown on both sides.

Indian Bannock.—Mix 1 cup boiling milk, $\frac{1}{2}$ pint cornmeal, 1 teaspoon each of salt and sugar; when partially cooled, add 2 eggs, beaten separately; bake in a very hot oven in a shallow earthen dish; serve like a pudding, in the dish it is baked in.

Green Corn Patties.—For every cup of grated green corn allow 1 egg, $\frac{1}{4}$ cup of milk and 1 cup of flour; 1 teaspoon of baking powder should be well mixed with the flour. Stir all together until well mixed, then bake in buttered patty-pans. This recipe can be doubled, if the family to be served requires it.

GEMS, MUFFINS, SCONES, ETC.

Wheat Gems.—Beat 1 egg light, add 2 cups milk and 1 teaspoon salt, and granually beat it into 2 cups wheat flour; put it into hot, well-greased gem-pans, and bake about 20 minutes.

Wheat Gems No. 2.—Use 2 cups sweet milk, 1 tablespoon butter, 2 teaspoons baking powder, 1 teaspoon salt; flour to thicken.

GRAHAM GEMS.

2 cups sour milk.	1 egg.	1 teaspoon melted butter or drippings.
1 tablespoon molasses.	1 teaspoon salt.	

About 2 teacups graham flour. Have the gem-pans hot; butter and fill $\frac{3}{4}$ full. Bake in a quick oven.

Graham Gems No. 2.—Use 2 cups sour milk, 3 cups graham flour, $\frac{1}{2}$ teaspoon soda; beat together a few minutes, drop it into hot, greased, gem-pans, and bake in a quick oven 10 or 15 minutes.

MUFFINS (White Flour).

$\frac{1}{2}$ cup sugar.	2 eggs.	1 cup milk.
$2\frac{3}{4}$ cups flour.	2 teaspoons baking powder.	Butter the size of an egg.

Bake in cups, or hot gem-pan. Very good.

Muffins No. 2.—Into 3 cups flour sift 3 teaspoons baking powder, and a little salt; add 2 eggs and 2 cups milk; bake in a hot oven in rings or gem-tins.

Tea Muffins.—Work butter the size of an egg into 2 cups flour; add $\frac{1}{2}$ teaspoon salt, 2 tablespoons of sugar, and 2 even teaspoons baking powder, and stir together thoroughly; beat 1 egg, add to it 1 cup milk, mix it with the flour quickly, and bake in a hot oven. This will make 1 cake in a brick-shaped baking-pan; then cut in squares with a hot knife.

Buckwheat Muffins.—To 1 pint of sour milk and cream mixed, add 1 even teaspoon each of salt and soda, and make a stiff batter with buckwheat flour. Bake in a square tin, in a hot oven, about $\frac{1}{2}$ hour; cut in squares, and serve hot, with fried salt pork, and milk gravy made in the fat. This can also be made with the prepared buckwheat flour, by making a stiff batter with sweet milk, salt and

shortening; put in a hot gem-pan, and serve with butter, or milk gravy. A good breakfast dish.

GRAHAM MUFFINS.

3 cups graham flour.
1 cup white flour.

2 tablespoons sugar.
2 teaspoons baking powder.

1 teaspoon salt.

Mix all together. Then take a piece of butter the size of an egg and put it into 1 pint of sweet milk; set it on the stove until the butter is melted; when cool, mix all together with 2 eggs, and bake.

GRAHAM MUFFINS NO. 2.

2 cups graham flour.
1 cup white flour.

2½ cups sour milk.
1 tablespoon melted shortening.

1 tablespoon sugar.
1 tablespoon soda. Salt.

Cornmeal Muffins.—Use 1 egg, 1 cup sweet milk, 2 cups granulated yellow cornmeal, 1 cup white flour, 1 level teaspoon salt, butter size of an egg, 2 teaspoons baking powder. Butter the gem-pan and have it hot before putting in the batter, bake ½ hour in a hot oven.

Cornmeal Muffins No. 2.—Use 1 egg, 1 tablespoon sugar, 1 cup cornmeal, 1 cup flour, 2 teaspoons baking powder, ½ tablespoon butter, ½ teaspoon salt, milk to make a stiff batter.

Raised Muffins.—To 2 cups scalded milk, add butter or dripping the size of an egg, and 1 teaspoon salt; when lukewarm add ¼ of a yeast cake dissolved in ½ teacup warm water, or ½ teacup of liquid yeast; add 1 egg and about 4 cups flour, or enough to make a batter that will drop easily, remembering that it is thinner after rising. Beat all well together, let rise till light, and bake in buttered muffin rings on a griddle, or in a gem-pan. Do not stir it down before baking; mix at night for breakfast, and in the morning for supper.

Rice Muffins.—Use 1 cup cold boiled rice, 2 cups flour, 2 eggs, 1 teaspoon salt, 1 tablespoon butter, 1 quart milk, or enough to make a thin batter; bake quickly.

Rye Muffins.—Sift together 1 cup wheat flour, ¼ cup sugar, 1 teaspoon cream tartar, ½ teaspoon soda, ½ teaspoon salt, add 1 cup rye meal (not flour); beat 1 egg, add 1 cup milk, add it to the other ingredients, beat well, put in hot, greased muffin tins, and bake 20 minutes in a quick oven.

Gluten Muffins.—To 1 egg, beaten light without separating, add 1 pint milk, 1 teaspoon salt and 1 pint gluten flour; beat well, add 2 teaspoons baking powder, pour into well-greased, hot muffin rings, and bake in a quick oven ¼ hour.

Entire Wheat Muffins.—Mix together 1½ cups wheat flour, 2 tablespoons sugar, 1 teaspoon salt, 2 teaspoons baking powder; sift them into a bowl. Then beat 1 egg till light, and add 1 cup milk and ½ cup of water; pour this on to the first mixture, and beat rapidly and energetically. Have buttered muffin-pans ready, pour in the batter, and bake in a rather quick oven about 25 minutes. The batter will be thin, and the muffins moist, but that is right.

English Crumpets.—In 3 cups lukewarm milk, put 1 saltspoon salt, and ½ a yeast cake dissolved, or ½ cup liquid yeast; let rise till light, and add 2 tablespoons melted butter, and a trifle of flour to keep the batter from becoming too thin; stir in hard, 1 saltspoon soda, let stand ¼ hour, and bake in patty-pans, or muffin-rings.

Graham Crumpets.—Dissolve ½ cup butter in 1 quart scalded sweet milk, and when cool, add 1 cake compressed yeast (soaked in a little water), 1 teaspoon salt, and 2 tablespoons sugar; add enough graham flour to make a rather stiff batter, and beat hard a few minutes; let rise over night in a warm place, and in the morning add 2 well-beaten eggs; put in buttered gem-tins, let rise till light, and bake in a moderate oven.

SALLY LUNN.

2½ cups flour.
1 egg, well beaten.
¾ teaspoon soda.

¼ cup sugar.
1 cup sweet milk.

3 tablespoons butter (melted).
1½ teaspoon cream tartar.

Bake 20 minutes in muffin-rings, or in square pie-pans.

Cornmeal Scones.—Mix 2 teaspoons baking powder, 1 teaspoon salt and 1 tablespoon of sugar into 1 pint cornmeal; rub in with the hand 1 tablespoon butter; make it into a batter that will *drop* from a spoon (not pour) with cold milk; bake like ordinary muffins in muffin-rings on a griddle.

Scotch Scones.—Into 2 cups flour sift 2 small teaspoons baking powder; rub in with the hand 4 tablespoons butter, adding a little milk to bind the paste; flour the bread-board and pin, roll out ¼ inch thick, cut into small 3-cornered pieces with a sharp knife; bake in a quick oven on a baking sheet, taking out as soon as they are lightly and evenly colored.

Oatmeal Cakes.—Use 2 cups of oatmeal, 2 tablespoons shortening (either butter, beef fat, or salt pork fat). Rub the fat into the meal; add cold water enough to make a dough. Mold until smooth, roll out thin, cut into rounds or squares, and bake quickly in a hot oven.

Oatmeal Cakes No. 2.—Stir oatmeal with cold water, making a thick paste; salt to taste. Make into little round cakes, about ¼ inch thick, in tin bake-pans, and bake in an oven not too hot. Excellent.

Pop Overs.—Use 1 cup of milk, 1 cup flour, 1 egg, a pinch of salt; beat the white and yolk of the egg separately until very light, then beat all well together, and bake in a quick oven.

Breakfast Puffs.—Use 1 cup milk, 1½ cups flour, 2 eggs, ½ teaspoon salt; beat 5 minutes, and bake in gem-pans.

Bread Puffs.—Take light bread dough, roll out about ½ inch thick, cut with a biscuit-cutter, drop into boiling lard, and turn over very quickly.

GRIDDLE CAKES.

To Keep Buckwheat Batter Sweet.—Cover with cold water the batter left after you are done baking cakes; drain it off carefully at night before stirring up fresh batter; the batter settles at the bottom, while the water absorbs the acid, thus keeping the batter sweet and fresh.

A Substitute for Maple Syrup.—Take 2 cups light brown sugar and 1 cup of water and boil until a nice thick syrup; then flavor with a teaspoon of vanilla, when nearly cold. Nice with griddle cakes and hot biscuits. Use other flavoring if desired.

Fruit Syrup.—Dissolve in water 1 level teaspoon of corn-starch, put into 1 pint tart fruit juice, and add 1½ cups sugar. Excellent for hot griddle cakes and puddings.

Caramel Syrup, a recipe for preparing which we give elsewhere, is fine with griddle cakes.

It is said that a common iron griddle, ground down smooth on a grindstone and then polished with fine sandpaper on a flat piece of wood, is superior to a soapstone griddle, and can be used without grease.

If buckwheat batter has a small spoonful of molasses added to it each morning, it will give the cakes a fine brown color. Grease the griddle evenly, and do not leave pools of fat to burn and taint the cakes. Turn the griddle often, to keep it evenly heated on all sides; have it hot enough, so the mixture hisses or sizzles as it touches it. Do not turn the griddle cakes more than once, as that will make them heavy.

Apple Griddle Cakes.—Put 1 cup finely chopped apple in 1 quart of any griddle cake batter; distribute it evenly by stirring with the spoon every time a spoonful is taken out.

Buckwheat Cakes.—Use 1 quart buckwheat flour, $\frac{1}{2}$ cup cornmeal, 1 tablespoon salt, 4 tablespoons yeast, 1 tablespoon molasses (not syrup); mix with warm water enough to make a thin batter, and let rise over night in a warm place. If the batter is the least bit sour in the morning, a little soda should be added, and if not sour, a very little soda will make them more light and tender.

Quick Buckwheat Cakes.—To 2 cups of buckwheat flour, add 2 teaspoons baking powder, 1 teaspoon salt, and 1 tablespoon brown sugar (or New Orleans molasses instead); when ready to bake, add 2 cups cold water, or enough to make a batter, stirring as little as possible after it is stirred smooth. Wheat flour, cornmeal, or graham flour, may be added, if desired.

Cornmeal Griddle Cakes.—Use 1 pint cornmeal, $\frac{3}{4}$ pint sour milk and 1 teaspoon soda in the milk, stirred until it foams, 2 eggs beaten until light, salt to taste; have the griddle hot and well greased. About 1 tablespoon of wheat flour added to the cornmeal is an improvement.

Cornmeal Griddle Cakes No. 2.—Use 1 cup sweet milk, or cold water, 1 egg, 2 cups yellow cornmeal, $\frac{1}{2}$ cup flour, 1 tablespoon salt, 2 teaspoons baking powder.

Strawberries and Griddle Cakes.—If you want a delightful dish, use hot cornmeal griddle cakes, strawberries, sugar and cream, and combine them sandwich fashion.

Stale Bread Griddle Cakes.—Soak 2 cups stale bread crumbs for 1 hour in 1 quart of milk which has been made boiling hot to pour over them; beat 2 eggs till light, yolks and whites separate; into the soaked bread-batter put first the beaten yolks, then 3 ounces flour, 1 tablespoon melted butter, 1 scant teaspoon salt; beat thoroughly, and then stir in very lightly 2 teaspoons baking powder and the beaten whites. Grease the griddle with salt pork fat, and bake quickly in small cakes. These are about the lightest and most digestible griddle cakes that are made.

Oatmeal Griddle Cakes.—Use 1 cup oatmeal, 1 cup flour, 1 teaspoon sugar, 1 teaspoon baking powder, $\frac{1}{2}$ teaspoon salt; sift the baking powder in with the flour; add cold water to make a batter the consistency of buckwheat cakes; beat together well, and bake immediately.

Graham Griddle Cakes.—Use $\frac{1}{2}$ graham and $\frac{1}{2}$ wheat flour; mix with sour milk, or buttermilk, and soda (1 small teaspoon soda to 1 quart milk); add a pinch of salt and 1 egg. Bake immediately on a hot griddle.

Rice Griddle Cakes.—To 1 cup boiled rice add $\frac{1}{2}$ cup milk, the yolks of 3 eggs, 2 tablespoons flour and a little salt; then beat the whites of the eggs to a stiff froth, stir them with the other ingredients and fry as soon as possible after they are added, on a hot, buttered griddle. These are light, digestible, and especially nice for invalids.

Raised Griddle Cakes.—At night scald 1 cup white cornmeal with 2 cups boiling water; while warm stir in 2 cups flour, 2 cups milk, 2 tablespoons brown sugar, and 2 tablespoons yeast; let it rise over night, and in the morning add 2 eggs, a little salt, and $\frac{1}{2}$ teaspoon baking powder; if too thin, add cornmeal till it is of the right consistency.

Squash Griddle Cakes.—Into 1 cup boiled and sifted squash (use dry, mealy squash) pour $\frac{1}{2}$ pint boiling milk; add 1 tablespoon sugar, 2 teaspoons butter, $\frac{1}{2}$ teaspoon salt; let it cool and add 1 well-beaten egg, and 1 cup flour into which 2 teaspoons of baking powder have been sifted. If too thick, thin with milk; add more flour if too thin.

Pease Griddle Cakes can be made the same way, by using instead of the

squash, 1 cup pease which have been boiled, mashed, and passed through the squash strainer.

Flannel Cakes.—Make a batter with $\frac{1}{2}$ pint milk; and $\frac{1}{2}$ pint flour with 1 teaspoon of soda sifted into it; beat in 1 teaspoon melted butter, a little salt, and 1 egg; add more milk if the batter is too thick; bake on a griddle.

WAFFLES.

Grease the waffle iron thoroughly, as, if the waffles stick it is hard to clean. Use salt pork fat, or butter wrapped in a thin clean cloth. Heat the iron well, both sides, grease it and only fill about $\frac{2}{3}$ full, leaving room for them to rise; cook one side a minute, then turn and cook the other. They will take longer to bake than griddle cakes. Butter as soon as done, and sprinkle on powdered sugar, or serve with lemon syrup, maple syrup or caramel sauce.

Waffles No. 1.—Into 4 cups flour sift 2 teaspoons baking powder, and 1 teaspoon each of sugar and salt; add 2 eggs, 1 tablespoon butter, and 1 cup either sweet or sour milk; if the latter, use 1 teaspoon soda.

No. 2.—Use 2 cups buttermilk, flour enough to make a rather thin batter, 1 teaspoon each of salt and soda, 1 egg; stir the milk, flour and salt together, sift the soda in the batter, beat yolk and white separately, and add the white last. Have the waffle irons very hot, and well greased, before putting in the batter. Salt or water will cause the waffles to stick to the irons; the batter is also apt to stick if sour. If the milk is very sour a little more soda than the above can be used. Some people use sweet milk, and prefer it.

Raised Waffles.—To 2 cups flour add 2 cups milk and 5 tablespoons yeast; let rise over night, and in the morning add 2 teaspoons melted butter, $\frac{1}{2}$ teaspoon salt, and 2 eggs, whites and yolks beaten separately.

Corn-Starch Waffles.—Make a batter with 2 cups (heaped) corn-starch, 1 scant cup sugar, 2 eggs, a little lemon flavor, adding milk as needed; warm the molds, butter them out and fill, close them, place on the fire, then turn them over; repeat this until they are evenly baked; dust sugar over them when done.

Cornmeal Waffles.—Take the beaten yolks of 3 eggs, 2 pints sour milk or buttermilk, and enough cornmeal to make a batter a trifle thicker than for griddle cakes; dissolve 1 teaspoon soda in warm water, stir it into the milk, and add a little salt. Use $\frac{1}{2}$ wheat flour if they break in pieces while cooking.

Rice Waffles.—Use 2 eggs, $\frac{1}{2}$ cup boiled rice, $1\frac{1}{2}$ cups flour, 1 teaspoon baking powder, butter the size of a walnut, a little salt, $1\frac{1}{4}$ cups milk; mix well and bake immediately.

Rice and Cornmeal Waffles.—Use 2 well-beaten eggs, $\frac{1}{2}$ pint cold boiled rice, $\frac{1}{2}$ pint cornmeal, $\frac{1}{2}$ pint wheat flour, $\frac{1}{2}$ teaspoon baking powder, 1 teaspoon salt, 2 tablespoons melted butter, 2 cups milk; beat together thoroughly before baking.

MUSHES, TOAST, SANDWICHES, ETC.

MUSHES, ETC.

As the grain of which mush is made is coarsely ground, in order to cook the starch properly and soften the cellulose, long boiling is required. Thorough cooking is the most important point connected with its preparation.

Cornmeal Mush.—Have the water boiling, and nothing short of boiling, with sufficient salt in the water for seasoning. Stir in the meal gradually, sifting it

slowly through the fingers of the left hand while stirring with the right. Use a kettle with a rounding bottom. Do not make it too thick if it is to be eaten with milk, or with sugar and milk for dessert. If it is to fry, 1 or 2 handfuls of flour added at the last will improve it. Mush should cook *very thoroughly*; after it is thickened enough set it on top of the stove where it will cook slowly 1 or 2 hours; stir often.

No. 2.—Mix 1 cup cornmeal and 1 teaspoon salt to a paste with a little cold water; then pour on 2 pints boiling water, put it in a double boiler, and boil 4 or 5 hours. If the water cooks away add more boiling water from the teakettle. There is no danger of its burning in the double boiler. Anything will cook faster in the double boiler, if the water in the lower boiler is strongly salted.

Fried Mush.—Put the mush in brick-shaped baking-tins used for bread, and when cold and solid cut in slices. The old way has been to fry the slices on a spider or on a griddle with salt pork fat. A better way is to cut the slices a little less than $\frac{1}{2}$ inch thick; dip them in beaten egg, roll in cracker or bread crumbs, and fry like doughnuts in hot fat. Oatmeal or other mushes may be fried in the same way.

Green Corn Mush.—Take corn on the cob when the milk is just set, grate it, and make mush in the ordinary way; eat in milk. Excellent.

Oatmeal Mush.—Put $\frac{1}{2}$ pint oatmeal and 1 teaspoon salt into the double boiler; add 4 cups boiling water, set the upper part of the boiler on the stove and boil 4 or 5 minutes to start the cooking; then put it into the lower boiler and cook 3 to 5 hours; salting the water in the lower boiler makes it cook faster. It is often cooked so that the grains are whole, but it is not then so easily digested, nor so pleasant in flavor. It should be thin enough to pour when done, and should cool into a jelly-like consistency. Serve with sugar and cream, tart jelly, apple sauce or baked apples.

Graham Mush.—Use a little cold water and mix to a thin paste $\frac{1}{2}$ pint graham flour and 1 teaspoon salt; stir in 4 cups boiling water, and cook like oatmeal mush, but it does not need to cook so long. Just before taking graham mush from the fire, stir in stoned dates, and you will find it makes a very nice pudding.

Buckwheat Mush.—Mush made of buckwheat flour is made in the same way as cornmeal mush, but requires less cooking. When cold it can be fried, if desired, like cornmeal mush.

Gluten Mush.—Use 2 cups boiling water to 1 cup gluten; cook like graham mush. It does not thicken because it contains no starch.

Rye Mush.—Cook as directed for graham mush. It is served with molasses often.

Hominy Mush.—Cook in the double boiler 3 or 4 hours as directed for oatmeal mush, using a little over 4 times its bulk of water, and salt to taste. (For the long cooking absolutely necessary with corn preparations, the double boiler is much the best thing to use.) It can be eaten in bowls with milk, or for dessert with hard sauce. When cold, it can be fried as directed for cornmeal mush.

Cracked Wheat.—Pick over $\frac{1}{2}$ pint cracked wheat, put it in a double boiler, add 1 teaspoon salt, and 3 cups boiling water, and cook it 2 or 3 hours. It cooks best in a double boiler. Serve with sugar and cream. It can, if desired, be poured into cups or jelly-molds, wet with cold water, and so molded.

Farina.—Into 2 cups boiling water, put $\frac{1}{2}$ saltspoon salt, and 3 tablespoons farina; let it actually boil in a sauce-pan 20 minutes, or cook 1 hour in a double boiler. Serve with sugar and milk or cream.

Granula.—To 1 cup granula add 1 teaspoon salt, and $1\frac{1}{2}$ cups boiling water, and boil 10 to 15 minutes; this is better than to boil it 1 minute in milk as is often recommended. It is a preparation of grain prepared by dry heat, and is cooked nearly enough when bought.

Wheat Germ.—Use $1\frac{1}{2}$ cups boiling water, $\frac{1}{2}$ teaspoon salt, and $\frac{1}{2}$ cup wheat germ, and boil 30 minutes in an uncovered sauce-pan, or 1 hour in a double boiler; it is doubtful if it is wholesome cooked in the short time directed on the packages. *Imperial Granum* can be prepared the same way.

Hulled Corn.—Soak a quart of yellow corn over night; the next morning pour off the water and put the corn in a kettle of hot water containing a cheese-cloth bag, holding a pint, or a little more, of clean wood ashes. Boil until the hulls begin to come off, then pour off the lye; rub the corn well in cool water to remove the hulls, then boil again in clear water until soft; changing the water once or twice to take out the taste of the lye as much as possible. Hulled corn is eaten with milk like mush, and like mush it is fried when cold.

Hasty Pudding.—Into 2 cups cold milk, stir 2 cups cornmeal, 2 teaspoons flour, 1 teaspoon salt; gradually stir this into 4 cups *boiling* water, and boil 30 minutes, stirring it frequently. It can be fried when cold as directed for cornmeal mush.

TOAST.

Simple as the process of making it seems, perfect toast is very rare. Good toast should be crisp and golden clear through, not brown outside and clammy in the center. Use stale bread, cut even slices about $\frac{1}{4}$ inch thick, heat them gradually at first, so that the heat may penetrate to the center of the slice and evaporate the water before the outside is crusted over; dry it carefully, and, *when well dried*, move it near the coals (which should be clear and red); and it will quickly turn a golden brown.

Toast is often eaten which is cut in thick slices, browned outside, and left clammy in the center. Such toast is less wholesome than untoasted bread, and is wholly unfit for invalids, although healthy stomachs may cope with it. *Well made* toast is very easy of digestion, and well suited for invalids, because starch, when heated to 401° , is turned to *dextrin*, and that is much more easily digested than the starch. The object should be to turn as much of the starch as possible to dextrin, and *clear through the bread*, not merely a little on the outside. A little caramel is also developed usually in toasting bread. Some people prefer toast soft inside and browned outside, because they say it is easier to eat, but if you will try it you will find good, dry toast easily breaks and crumbles apart, and is readily moistened by the saliva. *For invalids* always instead of leaving toast soft inside, it is better to toast the bread well, and then dip it in hot water for an instant to moisten it, but do not *soak* it. If possible, serve dry toast directly from the fire; if not, pile it on a plate, lay a napkin over it, and set it in the oven, or on the hearth to keep warm. Be careful not to *burn* the outside while toasting bread. For ordinary use (not for invalids) the thicker slices of bread, less perfectly toasted, can, of course, be eaten by those who prefer them.

Water Toast.—Prepare a pan of boiling hot water, adding always 1 teaspoon salt to the quart of water. Dip in each slice of toast quickly; moisten the toast merely, but do not let it *soak*, as sloppy, sodden toast is not good. Butter each slice and pile them on a hot plate. Apple sauce, baked apples, poached eggs, and minced meats go with this kind of toast.

Milk Toast.—For plain milk toast, toast the bread, and pour 3 or 4 tablespoons of boiling salted milk or cream on each slice. The toast can be buttered or not, as preferred, before pouring on the hot milk. Crackers can be split, toasted, and prepared the same way. Or, scald the milk, add for each pint 1 tablespoon corn-starch, or flour dissolved in a little cold water, 1 teaspoon butter, and $\frac{1}{2}$ teaspoon salt; prepare the toast, moisten it, dip each slice in the hot, thickened milk, put all in a dish, and pour the balance of the thickened milk over it. Serve hot.

Cream Toast.—Put 2 cups milk into a sauce-pan and bring it to a boil; while it is heating, put 1 tablespoon each of butter and flour in another sauce-pan, stir them together gently while the butter is melting, and then let them bubble 2 or

3 minutes together; then add the hot milk, a little at a time, stirring it in well till it is smooth and free from lumps; let it simmer while preparing the toast. Toast the bread, soak it *thoroughly* in salted boiling milk (as the cream will be too thick to soften it), put it in a dish, and pour the prepared cream over and between the slices.

Meringued Toast.—Prepare a meringue by dissolving 1 teaspoon butter in $\frac{1}{2}$ cup boiling milk, and just before taking it from the fire, stir in the well-beaten white of 1 egg; pour this over freshly-toasted bread, which has been dipped in slightly salted water; put it in the oven 5 minutes, and delicately brown the meringue.

Vermicelli Toast.—Pass the yolk of hard-boiled eggs through a coarse strainer; it will fall out in broken threads, looking something like vermicelli; scatter it over cream toast.

Toasted Graham Gems.—Split the gems, toast nicely, and while they are toasting, heat some rich milk to the boiling point, add a little salt, butter, and thicken with flour moistened with cold milk, and pour over the toasted gems. Gems left one day may be thus utilized for the next day's breakfast.

Strawberry Toast.—Toast thick slices of bread, butter them, and pile them with alternate layers of strawberries, crushed and sweetened as for shortcake, with strawberries on top; serve with cream, at once and while hot.

SANDWICHES.

Bread for sandwiches should be one day old, and a brick-shaped loaf is the best. Cut the crust from the end, then spread the end of the loaf evenly with softened butter, or compounds of butter, seasoned meat, etc., if desired, then with a sharp knife cut the buttered slice from the loaf. In this way the bread is not broken, as it is apt to be if very tender, when spread after slicing. Spread and cut in this way until the loaf is used. Place two of the spread slices together, press firmly, and trim in any way liked. They may be cut in rounds or heart-shaped with biscuit cutters; the crust may be trimmed off and the sandwiches cut from corner to corner, making triangles; or for ordinary occasions they may be left untrimmed, as many persons prefer them with the crusts.

For hearty, hungry children, nothing is better for luncheons, picnic refreshments, etc., than sandwiches. Spread evenly the end of a loaf of good home-made bread, a day old, then cut it off $\frac{1}{4}$ inch thick, spread another slice with butter, place boiled ham, cold tongue, roast beef or chicken, on one slice, cover it with another, and press tightly together; roll each one in buttered paper, or all together in a clean napkin. To keep them moist until eaten, put them after wrapping, into a tin pail, and cover tightly.

If the meat used for filling sandwiches is chopped fine it will be much more convenient to eat. In putting up sandwiches for picnics, etc., it will add to their appearance to tie them with ribbon in packages; a different colored ribbon can be used effectively for each kind of sandwich.

Although it is a little more trouble to make them, sandwiches can be improved both in appearance and flavor by cutting thin slices of bread into small square, oval, or round pieces, and frying them in smoking hot fat to a light golded brown; then drain on blotting paper. These pieces can be made into anchovy, lobster, egg, salmon, chicken or other sandwiches, piled high on plates with bright green parsley around the base. Such sandwiches are admirably adapted for evening parties, and will be more appreciated than second and third rate sweets.

Mustard or Anchovy Butter for sandwiches may be prepared as follows: For mustard butter, take soft butter the size of an egg, and 2 tablespoons of good mustard, put them in a stone mortar and work them together with the pestle till perfectly mixed. For anchovy butter take the same amount of butter and 1 teaspoon of anchovy paste, and work them together in the same way. Same proportions for larger quantities.

Aberdeen Sandwiches.—Put in the chopping-bowl cold meat, either of veal, ham, beef or poultry, and chop it very fine; for 1 teacup of chopped meat, add to it a piece of softened butter the size of an egg, a little pepper and salt, with 1 or 2 spoonfuls of water to slightly moisten it, and 1 teacup of fine bread crumbs; chop and mix all to a paste. Take a bit of the mixture on the molding-board, and with a knife wet in hot water, form it into a strip about 3 inches long and 2 wide. Trim off the edges, detach it from the board with a knife, and roll into an oblong shape. If it is too dry to roll without cracking, add a little more water; if too wet, add more bread crumbs. These are served with lettuce, or cresses.

Anchovy and Egg Sandwiches.—Bone anchovies, steep them in milk for 2 hours and chop fine; also mince hard-boiled eggs very fine; sprinkle the chopped egg on a slice of buttered bread, cover with the anchovy, add pepper and a layer of mustard and cress, and lay on the other slice of buttered bread.

Baked Sandwiches.—Sprinkle salt and pepper on thin slices of cold meat, put them between thin slices of bread, form them into a pile 5 or 6 inches high, fasten them together with a skewer, and brown them until the bread is crisp, in a hot oven, first basting them with melted butter.

Cheese Sandwiches.—Mix together $\frac{1}{4}$ lb. of grated cheese, and $\frac{1}{2}$ teaspoon each of pepper, salt and mustard, add 1 tablespoon each of vinegar and melted butter, make it to a paste, and spread it thin on the buttered bread.

Egg Sandwiches.—(1) Put between buttered slices of bread moderately thin slices of hard-boiled egg, seasoning them with salt, pepper and nutmeg. (2) Chop the whites of hard-boiled eggs very fine; mash the yolks, and mix with melted butter, salt and pepper. If not smooth enough, add thick cream. Spread the paste on the bread.

Fish Sandwiches.—Use any kind of cooked fish, chop it finely, make it into a soft paste with butter, and season it well.

Ginger Sandwiches.—Use the preserved ginger which comes in small jars; cut very thin, and put between slices of buttered bread. Cover with a damp napkin until ready to serve.

Ham Sandwiches.—Boil the ham the day before, slice it as thin as possible, and lay it between the thin, buttered slices of bread. Spread on a little mustard, or not, as preferred. *Chopped ham sandwiches* can be made by chopping the ham as fine as grated cheese, and making it to a paste with melted butter, or butter and cream, or beaten egg, as preferred, with mixed mustard, pepper, and a little finely chopped pickle. Then spread the paste on the bread.

Honover Sandwiches.—To the well-beaten yolks of 2 eggs, add $\frac{1}{2}$ lb. best butter, 3 tablespoons mixed mustard, a little pepper and salt; beat all together very smoothly, and set on ice. Spread it on thin slices of bread, and put between the slices very finely chopped tongue and ham, to which a little chicken or roast beef is added. This makes a delicious sandwich. Thin slices of pressed beef may also be used.

Labette Sandwiches.—Spread Devonshire cream on thin buttered slices of brown bread; then spread on apricot jam, being careful that there are no lumps in it, then lay on another slice of buttered bread, and press together.

Lettuce Sandwiches.—Put crisp lettuce leaves between thin slices of buttered bread; serve as soon as possible after preparing. Add a mayonnaise dressing if preferred. *Various Sandwiches* can be thus made by using instead of the lettuce, the plumed tops of young white *celery*; or *nasturtium leaves*; or young *dandelion leaves*; or *peppergress*; or *water-cress*; and so on.

Lobster Sandwiches.—Pound together in a mortar until quite smooth $\frac{1}{2}$ lb. lobster meat, the yolks of 2 hard-boiled eggs, 2 oz. butter, 5 capers, pepper, salt, and cayenne to taste. Spread thinly on slices of bread and butter, sprinkle with a very little chopped mustard and cress, if liked, cover with another slice of bread and butter, cut neatly, and serve.

Salmon Sandwiches.—Drain all the oil from canned salmon, remove all skin and bone, reduce it to a paste, season, spread some on one slice of buttered bread, squeeze lemon juice over it, and lay on the other buttered slice of bread.

Sardine Sandwiches.—(1) Drain the sardines from the oil, put them in hot water a few minutes which will take out the grease, drain them, dry in a cloth, and pound to a paste; season with salt and pepper, add a little very finely chopped lettuce, and spread it on the bread. (2) Chop the fish fine, add a few drops of lemon juice, and cover the buttered bread with it.

Tomato Sandwiches.—(1) Spread a French dressing over the buttered slices of bread, and put slices of tomatoes between them. (2) Put potted beef on the lower buttered slice, lay on thin slices of tomatoes, season with salt and pepper, and lay on the top slice.

Various Sandwiches.—A little ingenuity will invent an almost endless variety of new and attractive sandwiches. We suggest a few more. (1) Prawns or shrimps may be used instead of lobster. (2) Fresh caviare spread on bread and butter, with a squeeze of lemon, a pinch of cayenne, and if liked, a little minced salad, is excellent. (3) Slices of cucumber, dressed with oil and vinegar, make a delicious sandwich. (4) Use yolks of eggs pounded with butter and Parmesan cheese. (5) Make pate de foie gras sandwiches, with or without water-cress. (6) Make salmon or shrimp sandwiches with mayonnaise sauce and minced salad. (7) Put kippered salmon in thin shreds between slices of *brown* bread and butter. (8) Vary any sandwich by using mayonnaise, bechamel or other sauce.

PASTRY.

Notwithstanding the frequent denunciations of pastry for its unhealthfulness, people will eat pie, and a thorough knowledge of pastry-making is indispensable to the economical housewife. To succeed in this, certain rules must be remembered and implicitly carried out. The excellence of puff paste depends upon the quality of the materials used, the lightness of hand and dexterity of the operator, and the coldness of the materials. The hands should be washed very clean, and then dipped into very hot and then into cold water. The mixing-bowl should also be filled with hot, and then with cold water, which makes it smooth and prevents the butter from sticking. The slab or board for working upon should be smooth, clean and dry. A marble slab is better than a board because it keeps the pastry cooler, but few can command this, and a board is more frequently used.

The Flour.—The flour used should be of a fine quality, and should be thoroughly sifted, dried and chilled. For making paste a starchy flour is better than one rich in gluten, and that is what is meant by *pastry flour*. Although eggs are commonly used in paste, they are really not necessary, and a good paste can be made without them. The butter should be of good quality and pliable, or it will not mix properly with the pastry. Work it in clear, cold water, to free it from salt and buttermilk, and the pastry will then be more delicate; then keep it cold until used.

Method of Making Paste.—The method of making paste is as follows: For the best paste use 1 lb. of butter to 1 lb. of flour (if measured use 2 pints flour to 1 pint butter). Take 1 lb. of the washed butter, flatten it out, press it on all sides to remove the moisture, keep out about 2 or 3 oz. and put the balance in a floured cloth on ice till needed. Now put the 1 lb. of sifted and chilled flour into the mixing-bowl, keeping out about 2 oz. for sprinkling the board with, put in the 3 oz. of butter and 1 small teaspoon of salt, and the eggs if they are used, and with the tips of the fingers work them into the flour. Many chop these ingredients together to avoid heating them with the fingers. Add a little ice cold water occasionally, and keep mixing until a perfectly smooth paste is formed. A cupful of water, more or less, will be needed. When the paste is of the right consistency, and forms a smooth ball, dust the board lightly with flour, and remove the paste on to it, and pound it lightly with the rolling-pin to toughen it. Then roll it out about $\frac{1}{4}$ inch thick, always using a well-floured rolling-pin, and rolling from you. Then take the cold butter and roll it out in the same way, only

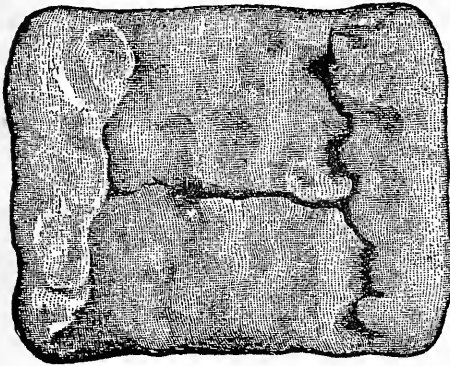


FIG. 1. PASTE FOLDED OVER THE BUTTER.

smaller, and lay it upon the paste, and fold the ends of the paste over the butter as shown in Fig. 1. (The butter is sometimes cut into 3 pieces and only 1 piece worked in at a time, but the method would be the same.) Then turn it bottom up on the board, and roll it out carefully, using a light, quick stroke, and being careful not to break the paste, as the aim should be to keep all the *air* possible *inside*, to assist in making it rise. If by accident the dough breaks, lay on a piece of plain dough (a little plain dough may be kept out for this purpose), dust on flour, and go on with the rolling. Roll it out into a sheet about $\frac{1}{4}$ inch thick, and fold $\frac{1}{2}$ of it over on to the

balance, and then the other side over on to that, making 3 layers about 3 times as long as it is wide, as shown in Fig. 2; then turn it, and fold it lengthwise into 3 thicknesses as shown in Fig. 3, when it will be ready for rolling out again. This is known as the "first turn."

In lifting the paste at any time let it roll up on the roller, then lift it gently, dust a little flour on the board, and gently unroll the paste the way you want it to lie, having the side which was next the roller come next the board. The process just described as the "first turn" should be repeated 3 or 4 times for common pies, and 6 or 7 times for the best pastry, but should be repeated until no streaks of butter can be seen. The more layers there are the more "flaky" it will be. To keep the butter evenly distributed so that the paste will rise evenly, it is folded in an *opposite direction* each time, and after each "turn" it is laid with the top of the paste on the board, thus turning it over. It is customary in warm weather (it is a good plan at any time) to put it on ice for 5 or 10 minutes

between each "turn." This may be done by putting it in a long, floured pan, putting it on ice, and then set another pan filled with ice on top of it, thus having ice both above and below. The top tin should not be heavy with ice, as only a little ice is needed. Tins are best, because dishes would not conduct heat readily enough to cool the paste quickly. After making the last "turn," roll the paste out about $\frac{1}{4}$ inch thick, and cut it in shape for pies, patties, etc. Some cooks think

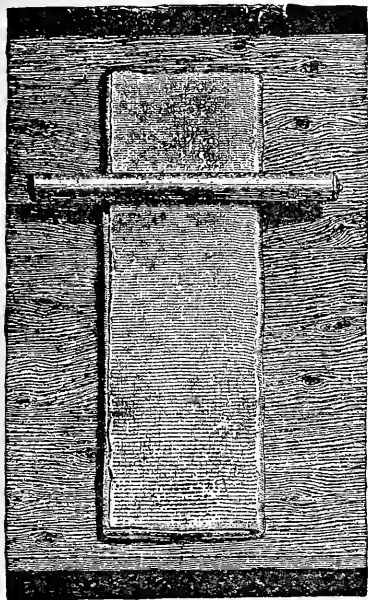


FIG. 2. ROLLED PASTE FOLDED OVER.

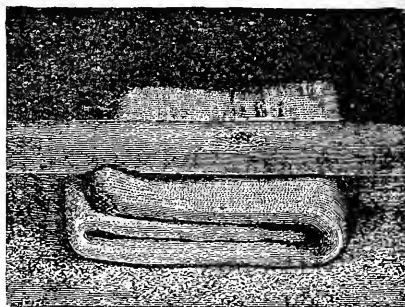


FIG. 3. PASTE AFTER MAKING A "TURN."

that the shortest route from the flour barrel to the bake oven is the best for pastry, and others prefer to set the paste aside in a cold place and bake next day. Skillful cooks obtain good results either way. From first to last the paste should be kept as *cold as possible*.

If not ready to bake at once when made up, keep the paste in the ice-chest until wanted. We knew of one lady who had a long, slim glass bottle which she filled with ice-water and used for a rolling-pin. Pastry should be rolled *tightly*, the rolling-pin often lifted and but little pressed upon, so as not to force out the air.

The point to aim at in making puff paste is to have as many alternate layers of butter and dough as possible, and to have each layer so light and thin that in baking it will rise separately. The paste will be difficult to manage, and a failure, probably, if it is either too dry and stiff or soft and sticky. The flour used is the least damp, the paste made from it may be heavy. The best flour used in rolling the paste the better, as if an excess of flour is used the flakes will be pale, thick and tough, if not absolutely flat and heavy, and the baking will be much slower. Using coarse and heavy flour may produce a similar result, and so may

slow and heavy handling, a warm or irregular temperature when working, or faulty baking.

The Butter.—If the butter is not right, rapid handling, partial freezing, an extra sprinkle of flour and a little cream of tartar may keep the flakes separated until the oven is reached and the baking begins; it will bake sharp and crisp with a quick heat, but the butter will fry out and cover the flakes of paste and they will be found greasy to the touch when removed from the oven. Do not suppose that if the butter and paste are not in the best condition possible the amount of the butter can be reduced in the finishing process of rolling together; there will be fewer layers of paste, the quality inferior and the quantity less.

For some dishes a rich crust is neither so digestible nor so suitable as a substantial light one, and a light, quick, cool hand will influence the lightness of the pastry as well as the quantity of butter used.

Baking-Tins.—For baking, tin plates should always be used, as the under crust will be apt to not bake well in anything earthen; the crust will readily separate from the pan when done. It should then be taken off the plate at once, or the under crust may get "soggy." Grease pie-tins well before laying on the crust; for some kinds of pastry they are wet with water instead of being greased.

The Oven.—The heat of the oven is important. If too hot, the top will become scorched before the pastry is risen; if too cold, it will melt, spread, and the paste become heavy and sodden. It is best, therefore, to keep the pastry out until the oven is right. Experience will guide in this, but a good plan is to try the heat of the oven first with a small piece of paste; the heat should be strong enough to cause the cold air in the paste to expand, and so make it rise, and then quickly set it in the form given by this expansion of the air. The heat should be strong underneath at first, to make the paste rise well before browning on top; then turn the heat from below, or to prevent burning, put a grate or pan under the baking-tin, and quicken the heat on top. To bake it a delicate brown, 15 minutes is usually enough. The pie should slip on the tin when done.

The Two Crusts.—In making pies with an upper crust *always* make small holes in it to allow for the escape of steam, or that will burst the crust. These holes may be made in any fanciful shape desired. An excellent plan is to use a rich paste for the top crust, and a plainer one, with much less shortening, for the under one. Have the under crust a little the thicker. If there is no upper crust, have a heavy edge on the pie. Mixing the white flour with $\frac{1}{2}$ to $\frac{1}{2}$ its bulk of cornmeal is said to make pie crust lighter and more digestible. A fine brown color will be given to the upper crust of pies if, just before putting them in the oven, they are brushed over with milk.

To Prevent Juice From Running Out.—To prevent the juices of fruit pies from running over, which is so annoying to cooks, various plans have been employed. (1) Mix the sugar with a little flour and spread this over the bottom crust before putting in the fruit. (2) In all fruit filling stir the flour *into* the fruit, so that all the fruit may be covered, instead of sprinkling it on top. Also avoid having too much fruit in the pie, and add no water, as the fruits make their own juice. (3) Have a pie-tin deep enough to allow a wall of crust deep enough to hold in the juice. (4) Make a small tube of writing paper about $\frac{1}{2}$ inch in diameter, and let it set through the upper and rest on the under crust. The juice will bubble up in this instead of running out. (4) Fasten the upper crust securely by turning the edge of it under the under crust, first wetting the latter with a little beaten white of egg or water. Sometimes the *white* of egg is used, and the two firmly pressed together without turning the upper under the lower crust. (5) Wet the edge of the under crust and press the two together; then wet a strip of white cloth, about 2 inches wide, and fasten it nicely around the edges of the crust; it can easily be removed when the pie is done, and will hold in the juice.

All the small juicy fruits, like strawberries, raspberries, blueberries and blackberries, can be made to retain their juices in the crust by mixing with the sugar used for sweetening them a heaping tablespoon of either flour, corn-starch, arrow-root, or cracker-dust. The mixture should be well shaken down through the berries before the top crust is put on; as the sugar draws out the juice, it is better not to sprinkle it on the fruit until that is put in the crust. The under crust in these pies will be raw and clammy, unless there is a good heat at the bottom

of the oven. If the under crust in fruit and custard pies, is rubbed over, just before filling the pies, with a mixture of egg, well beaten, it will prevent the juice from soaking into it. The white alone will do if the pie is very delicate in color. A tablespoon of powdered sugar added to the flour makes the paste into a nice, short crust, for fruit pies. If in fruit pies the sugar is not added until after they are baked, and then the crust is lifted up and it is put in, less sugar will be needed. (See what we say about "Using Sugar," in our chapter on "Cooked Fruit.") Flour, corn-starch, arrowroot or cracker-dust act simply by absorbing the surplus juice, and so keep it from running out.

The Principles Involved.—The principles involved in this mode of baking flour are as follows: In making paste or pie crust, the paste of flour and water is rolled out into very thin paper-like layers, with fat between. In folding and rolling it out, much cold air is imprisoned and distributed through the mass. When baked, this air is heated and so expands, and, being confined, it "lifts" the dough, or makes it rise and become light. This action is purely mechanical, without producing any chemical change like that worked by yeast. It is obvious that the colder this imprisoned air is when the mass is ready to bake, the more it will be contracted, and, therefore, when heated, the more it will expand and lift the dough; hence the repeated injunctions to keep the mass as cold as possible. Eggs, when used, act in two ways—they increase the tenacity of the dough so that it better retains the air, and when beaten up they carry a good deal of air into the dough. As soon as the cold air expands the mass should stiffen, before it has time to fall, hence the importance of having the heat of the oven right. It will be seen that the lightness of the pastry will depend on the amount and coldness of the air it contains before it is put in the oven, and the extent of the expansion of the air afterwards; therefore, other things being equal, the best pastry will be that which contains the greatest quantity of the coldest air before it is baked. Cooks with a hot hand will do well to mix the paste with a knife (a steel chopping-knife with a wooden handle is about the best thing) as the warmth of the hand will heat the paste in working it. The "flakiness" of the paste will depend on the number of *layers* of butter and paste it contains, but its rising depends on its air. We knew an experiment in making some pastry in which the lady pressed it hard with her thumb in certain spots. When baked, it was light everywhere except where her thumb had pressed, and there it was soggy and heavy. The pressure of her thumb had forced out the air, so that in those places there was nothing to expand and "lift" the paste. This will show the importance of the lightness and deftness of touch in making paste, which we have elsewhere insisted on.

Pastry, though generally liked, is not easily digested, and is not suited to delicate stomachs, although the strong may eat it. Flaky paste, although easily broken in pieces, is not easily pulverized or ground into a pulpy mass by the teeth, so that comparatively large-sized flakes are commonly swallowed, besides which the starchy matter, being enveloped in fat, is not readily reached by the saliva, and thus the first step in the conversion of flour into sugar is prevented, while for the same reason it is not readily attacked by the gastric juices in the stomach. From these causes proceed the evil results so often experienced from eating pastry. When eaten, it should be very thoroughly and patiently masticated.

Using Cornmeal.—Cornmeal mixed with flour, using $\frac{1}{2}$ cornmeal to $\frac{3}{4}$ flour or a little more, makes puddings or pastry more digestible, because it makes them less cohesive—that is, when it is used the products fall more readily into minute particles so that the saliva can act on the starch, and the gastric juice on the albumenoids, much more readily. Cornmeal, lacking gluten, breaks up the stickiness of gluten flour as we elsewhere explain.

Meringue for pies, puddings or cake, is a frosting spread on top of them. It is made by beating the white of 1 egg and 1 tablespoon of powdered white sugar to a froth, and flavoring it if desired. After spreading it on, it must always be put in the oven to brown and harden; let a pudding cool slightly before spreading it on, or else it will liquify.

Doree, or *gilding*, applied to patties, etc., is an egg beaten up and brushed over the top. It gives them a beautiful golden shade.

Paste, or Pie Crust.—For the best puff paste the uniform rule is equal quantities, by *weight*, of butter and flour. A good paste is made with $\frac{3}{4}$ lb. butter to 1 lb. flour. For home use, as low as $\frac{1}{4}$ lb. butter to 1 lb. flour is sometimes used.

For the best paste, good butter is the thing to use; the next best thing, butter and lard mixed. For meat pies clarified drippings makes a good crust. A light biscuit crust answers well for dumplings, and may also be used for meat pies. A paste made with lard alone, will be tender, but not flaky.

If any baking powder is used with paste at any time add that to the flour first of all. When baking powder is used in pastry, speedy work is needed or the effervescence will be over before the work is completed, the gas will escape, and the paste will fall. For delicate puff-paste or pie-crust do not use baking powder.

No. 1. Puff Paste.—Use 2 cups flour, 1 solid cup butter, and 1 level teaspoon salt. Mix about $\frac{1}{4}$ of the butter in the flour, then roll out and work in the balance as directed for making pastes, giving it 4 to 6 "turns." This makes a rich paste suitable for the upper crust of pies, using a plainer one for the under crust.

No. 2. Light Paste.—Use 2 cups flour, 1 solid cup butter, 1 level teaspoon salt, 1 egg (2 are sometimes used). Mix, roll out, and finish as directed above for making paste, giving it at least 4 “turns”—6 is better. It makes a good paste for fruit tarts.

No. 3. Pie Crust.—Use 1 cup shortening (lard and butter mixed), 3 cups flour, 1 even teaspoon salt. Mix with enough ice-water to hold all together, handling as little as possible. This is enough for 3 pies.

No. 4. French Paste.—Use 4 cups flour, 1 cup powdered sugar, 1 level teaspoon salt, 3 whole eggs. Mix thoroughly with the fingers to a smooth paste; if too dry to mold, add the yolk of another egg; after it is molded, roll out and cut. This paste is more digestible than shortened pie crust.

No. 5. Pie Crust.—Use 1 cup flour, 1 tablespoon lard, $\frac{1}{2}$ teaspoon baking powder, $\frac{1}{2}$ teaspoon salt. Sift the baking powder and salt together, chop the lard in the flour, and add just enough cold water to moisten the flour. This quantity will make 1 pie with 2 crusts.

No. 6. Pie Crust.—Use rich buttermilk, soda, and a little salt; have it as soft as it will hold together when mixed; flour the rolling-pin and molding-board plentifully. Bake in a rather slow oven, and do not cover after taking out. Dyspeptics can eat it.

PIES.

Apple Pie.—Line a large pie-plate with a good crust, fill it well with sliced apples; take a small cup of sugar and mix well with it 1 tablespoon of flour, a little nutmeg, half a teaspoon of cinnamon, and sprinkle over the pie; put on the top crust; wet the edges of the under crust, pinch the top one upon it closely, cut an opening in the middle of the top crust, and bake in a good oven about an hour; serve the day of baking.

Pot Apple Pie.—Put a quart of water in a kettle with 2 cups of sugar, a salt-pon of salt and 6 tart apples, pared, quartered and cored; let them cook in the syrup until they look like preserves, then make a baking-powder crust, without shortening, cut it in rounds with a biscuit cutter, put it in the kettle, add a piece of butter the size of an egg, and more water, if the syrup is much reduced, cover, and cook 20 minutes. Turn into a deep dish to serve. This is delicious.

Dried Apple Pie.—The dried apples should be soaked over night, then slowly stewed, in just water enough to cover them, for 2 or 3 hours, especially those dried in the old-fashioned way, and which are preferred by many cooks to those that are bleached. When soft, stir to a mash with a spoon, or work the apple through a coarse colander; season to taste with sugar and spices, and bake in two crusts. A few dried raspberries, or a little raspberry jam is a great improvement in dried apple pies.

A good way to treat dried apples is to soak them over night, then cover with boiling water, and stew soft. A little sour cider or lemon juice may be added if they are not tart enough, and a fine flavor will be imparted by adding a little orange peel when they are about half stewed; then add sugar and nutmeg to season, and strain through a colander.

Apple Custard Pie.—Take 2 cups sweet milk, 2 cups apple sauce, 3 eggs; flavor and sweeten, and bake with an under crust only. This will make 2 small or 1 large pie.

Apple Custard No. 2.—Take $\frac{1}{2}$ cup melted butter, 2 cups sugar, 3 cups stewed apples, 4 eggs beaten separately. Bake in pie-plates in bottom crusts only.

Apple Pie à la Mode.—Take a good apple pie, warm it, and spread ice cream over the top 1 inch thick, and serve at once.

Banana Pie.—Slice the bananas thinly, put over them the grated peel and

juice of a lemon, and let them lie in the acid for an hour before using; then sweeten to taste, and bake in 2 crusts.

Carrot Pie.—To 1 lb. of carrots, boiled and mashed through a colander, add 2 eggs, and rich milk or cream to make quite thin; flavor to taste with sugar, cinnamon and nutmeg; put it into 2 pie-plates lined with rich paste, and bake in a quick oven.

Cherry Pie.—Pit the cherries and be careful to reject all that are wormy; place them on a nice under crust, sweeten to taste, and mix a teaspoon of corn-starch with the sugar, or a tablespoon if the cherries are large and juicy. Bake in 2 crusts, or as a tart with strips of paste twisted and placed over it in diamond shape. Eat cold, with sugar sifted over the top.

Dried Cherry Pie.—Use a pie-plate that will hold 1 pint, line with rich paste; take 1 teacup of sugar and put $\frac{1}{3}$ of it on the under crust, roll 2 soda crackers fine, put $\frac{1}{3}$ on the sugar, and 1 teacup of cherries strewn evenly on the cracker, now add a piece of butter half the size of an egg, and cover with the remainder of the sugar and cracker; when the top crust is ready to put on, add 1 teacup of cold water, and bake $\frac{1}{2}$ hour in a moderate oven.

Ground Cherry Pie.—Line a pie-plate with a nice pie crust, and then put in a layer of ground cherries and 1 cup of sugar. Cover with a nice crust and bake.

The ground cherry (*Physalis viscosa*) belongs to the order *Solanaceæ*—the order which gives us the tomato and potato.

Chocolate Pie.—Take 2 cups milk, yolks of 2 eggs, $\frac{3}{4}$ of a cup of sugar, 2 tablespoons of corn-starch, and 2 tablespoons of grated chocolate. Heat the milk, sugar and chocolate together; when hot, add the corn-starch, mixed in a little of the cold milk, then add the beaten yolks; let all come to a boil; line a pie-tin with good pie crust, bake, and then pour in the chocolate cream; beat the whites of the eggs to a stiff froth with 2 tablespoons of white sugar; pour it over the pie, and set it in the oven to brown.

Green Cocoanut Pie.—Open the eyes of a cocoanut with a gimlet, and pour out the milk into a cup; then break the shell, take out the meat, and grate it fine, take the same weight of sugar and the grated nut and stir together; beat 4 eggs, the whites and yolks separately, to a stiff foam; mix 1 cup of cream, and the milk of the cocoanut with the sugar and nut; then add the eggs. Line deep pie-tins with a nice crust, fill them with the custard, and bake carefully $\frac{1}{2}$ hour.

Dried Cocoanut Pie.—Put a cup of cocoanut to soak in sweet milk as early in the morning as possible; take a teacup of the cocoanut and put it into a coffee-cup, and fill up with milk. When ready to bake take 2 teaspoons of flour, mix with milk, and stir until it thickens; add butter the size of a walnut, while warm; when cold, add a little salt, 2 eggs (saving out the white of one for the top), sweeten to taste, add the cocoanut, beating well, fill the crust and bake. When done, have the extra white beaten ready to spread over the top; return to the oven and brown lightly.

Corn-starch Pie.—Scald 1 pint of milk and stir in it 3 tablespoons of sugar and the beaten yolks of 2 eggs; wet 2 tablespoons of corn-starch with a little cold milk, and stir it in the milk, sugar, and eggs. Line a pie-plate with paste, bake, and fill it with the cream. Beat 2 tablespoons of sugar with the whites of the eggs; spread over the top of the pie, and set in the oven to brown. This may be served with or without cream, and will be found very nice.

Cream Pie.—Take 2 cups thick cream, and 1 cup milk. Put the cream and milk in a tin pail, and set in a kettle of boiling water. If there is danger that the cream may curdle, put into it as much soda as will lie on the point of a pen-

knife. When the cream is hot, beat the whites of 2 eggs, a tablespoon of corn-starch, and 2 heaping tablespoons of sugar all together, and add to the cream. When it thickens, let cool a little, and add a teaspoon of extract of vanilla. Pour into a deep crust already baked. Cover with a meringue and brown in the oven.

Cream Pie No. 2.—Bake a crust in a large pie-pan, lift it out on a plate; for filling, take 1 pint of very rich milk; boil $\frac{3}{4}$ of it; with the remaining $\frac{1}{4}$ stir 2 tablespoons of corn-starch; add to the boiling milk, stirring all the time; then add $\frac{1}{2}$ teacup of sugar, then the yolks of 2 eggs, well-beaten and thinned with a little milk; remove from the fire, flavor with vanilla, and pour into the crust; whip the whites, add $\frac{1}{2}$ teacup sugar, frost the pie, and place in the oven to brown slightly. Serve cold.

Cream Pie No. 3.—Use 1 egg, 1 cup sugar with butter size of an egg well rubbed into it, $\frac{1}{2}$ cup milk, in which dissolve $\frac{1}{2}$ teaspoon soda, $1\frac{1}{2}$ cups flour, and sift well through it 1 teaspoon cream tartar and a little salt; bake in 3 tins.

Cream Filling.—Take 1 egg, $\frac{1}{2}$ cup sugar, $\frac{1}{4}$ cup flour; wet the flour with a little milk, then stir it into 1 cup boiling milk, then add the egg and sugar, and a little salt; stir till thick and smooth. This is cheap, but delicious.

Green Currant Pie.—Currants fully grown, and just before turning red, make very nice pies; mix a little flour or corn-starch with the sugar used for seasoning, and bake with an upper crust. Green gooseberry pies are made in the same manner, first picking off the stems and blossom ends.

Custard Pie.—Take 2 teacups milk, 2 eggs, 3 tablespoons light brown sugar, 1 heaping teaspoon flour, a pinch of salt. Heat the milk, but do not let it boil. Beat eggs, sugar, flour and salt together, and add the milk. Line a deep plate with plain crust, pour in the mixture, and bake in a moderate oven until there is no milk in the center. Do not let it boil, as that causes it to whey. When done, grate nutmeg on top.

Custard Pie No. 2.—The proper proportions for a rich custard pie are 4 well-beaten eggs, 4 tablespoons of white sugar, and 1 quart of milk, or milk and cream mixed. This makes the filling for a deep pie-plate with a built-up edge of crust.

Frosted Custard Pie.—Use 1 pint of milk, the yolks of 3 eggs and white of 1, 2 tablespoons of sugar, a pinch of salt. When baked, put on the frosting made of the 2 remaining whites of the eggs, beaten stiff, and 2 spoonfuls powdered sugar, a small pinch of salt, and any flavoring you choose; set it back in the oven and brown.

Date Pie.—Prepare the dates as directed in the introduction to "Cake" (which see). Spread the lower crust on the pan, put in the prepared dates, add a little cold water, sprinkle with flour, dot with butter, put on the upper crust and bake.

Elderberry Pie.—Take $\frac{1}{2}$ elderberries and $\frac{1}{2}$ rhubarb, with sugar sufficient to sweeten, and bake with 2 crusts. This makes an excellent pie which cannot be distinguished from one made of raspberries, and is much cheaper. This proportion of elderberries and rhubarb makes a nice jam.

Fried Pies.—Roll out a good biscuit dough, about 7 or 8 inches in diameter, put a spoonful of any good sauce near the center, fold the dough over it, press the edges together, and fry like doughnuts in smoking hot fat.

Fruit Pies, or Tarts.—Fruit pies of all kinds may be made with an under-crust only. Have the fruit stewed, sweetened, and cold. Fill the crust with the fruit, place a few bits of butter over the fruit, and bake. When the pie is cool, eat the white of 1 egg and 1 tablespoon of fine sugar to a froth, spread over the

pie, and brown in the oven. If a thicker meringue is liked, make with whites of 2 eggs, and 2 tablespoons of sugar. If the fruit is very juicy a little pulverized cracker can be sprinkled over the pie before baking.

Pies made in this way with one crust are often called "tarts."

Fruit pies can also be made by putting the fruit in a pudding dish, sweeten and dust over the fruit a little corn-starch, flour, or cracker-dust; put bits of butter over the fruit, and any spices liked; cover with a crust a little thicker than when there is an under crust. Bake slowly. In this way there is no danger of losing the juice of the pie.

Gooseberry Pie.—Take ripe gooseberries, or green ones when fully grown, pick the stems and blow ends from them and place on the under crust. Mix a tablespoon of corn-starch in a small cup of sugar, for the sweetening. Bake with 2 crusts.

Grape Pie.—Take 1 coffee-cup of grapes, 1 tea-cup of sugar, 1 egg, a pinch of salt, a dessertspoon of flour, and a teaspoon of butter. This makes 1 pie. Bake in 2 crusts.

Hickory-nut Pie.—Use $1\frac{1}{2}$ pints milk, 4 teaspoons sugar, 2 eggs, and 1 cup chopped hickory-nut meats; bake with an under crust only.

Huckleberry Pie.—Fill a pie-tin, lined with paste, with the berries, and add sugar to sweeten—about $\frac{3}{4}$ cup. A pleasant tartness, which will improve the flavor, may be imparted by adding a little vinegar or lemon juice, or by mixing in some currants. Cover with a top crust and bake.

Jelly Pie.—Take 1 cup jelly, 2 cups sugar, 4 eggs, $\frac{1}{2}$ cup butter. Cream the butter and sugar, beat the yolks until light and stir them in, then add the beaten whites and last the jelly. A small piece of this served on the same plate with apple or peach pie is nice.

Lemon Pie.—Take 1 large, juicy lemon; grate the rind, and squeeze out all the juice; put 1 cup sugar and butter the size of an egg into a bowl; stir a tablespoon corn-starch into just enough cold water to make it smooth, then stir this into a cup of boiling water in a sauce-pan; as soon as it begins to boil pour it on the butter and sugar, stir in the lemon juice and rind, and when a little cooler, stir in the beaten yolks of 2 eggs; pour this into the crust, which should stand ready; bake as you would custard, until thick, but not until it wheys; beat the whites of the two eggs to a stiff froth, beat in a tablespoon powdered sugar, spread this on the pie, put in the oven and brown slightly. Be sure and put this pie together in the order named, and you will have no trouble. Flavor the frosting with lemon extract, or not, as desired.

Lemon Pie with Upper Crust.—Grate the yellow part of 2 lemons into a dish, peel off the white and throw away; then cut up the lemons with the grated yellow, add 5 eggs, if they are plenty, if not, 4 will do; add 2 cups of sugar, a little salt, and 2 tablespoons of water. Line your pie-tins with a flaky crust, and divide the filling for 2 pies; put on an upper crust, and bake in a quick oven, and you will find it a delicious dessert.

Mince Pies.—These generally come on Thanksgiving day for the season; they are better when a few days old. It is better to make the mince-meat a week before Thanksgiving, and the pies in time to stand at least 3 days. Boil 6 lbs. lean beef till tender, let it stand over night and then chop fine; chop 1 lb. beef suet, also 5 lbs. apples, and 2 lbs. seeded raisins; slice thin $\frac{1}{2}$ lb. citron, and mix these ingredients, with 2 tablespoons cinnamon, and 1 tablespoon grated nutmeg.

HINTS.—We may offer a few hints about mince pies. Dried apples, soaked in water a few hours, or over night, or Irish potatoes soaked in the same way in vinegar, make a very fair

substitute for fresh apples in mince pies. Fresh apples can be washed, wiped dry, and chopped fine without peeling, and some labor saved thereby. Dried cherries, and other fruit, prepared with sugar, can be soaked 10 or 12 hours in a very little water, and then both water and fruit used instead of raisins. They will be much cheaper and will answer very well. Economical housewives will often find hints like these very serviceable.

Canned Mince Meat.—If mince meat is canned hot, in the same manner as fruit, put in glass jars; sealed tight, and kept in a cool, dark place, it will keep for months. A quart jar full will hold enough for 2 pies, and in this way mince pies can be had the year round, as well as in winter.

MINCE MEAT.

3 bowls of meat chopped.	5 bowls of apple.	1 bowl molasses.	1 bowl vinegar.
2 bowls cider.	1 bowl suet.	2 bowls raisins.	1 bowl citron.
4 bowls sugar (use 5 if liked very sweet).	2 tablespoons cinnamon.	1 tablespoon cloves.	1 tablespoon salt.
3 lemons, use juice and yellow rind.		1 tablespoon pepper.	3 nutmegs.

A bowl holding about $1\frac{1}{2}$ pints is used for measuring. Very good.

MOCK MINCE PIE.

1 cup rolled crackers.	1 cup sugar.	1 cup molasses.	$\frac{1}{2}$ cup vinegar.
$\frac{1}{2}$ cup boiled cider.	1 cup hot water.	1 cup chopped raisins.	1 teaspoon nutmeg.
1 teaspoon of cloves.	2 teaspoons cin'mon.		

MOCK MINCE PIE NO. 2.

1 cup dried English currants.	1 cup sour cream.	1 cup sugar.	1 egg.
1 teaspoon cinnamon.	1 teaspoon cloves.	1 teaspoon allspice.	

This will make 2 pies. Bake in 2 crusts.

SUMMER MINCE PIES.

1 cup bread crumbs.	1 cup water.	1 cup raisins.
1 cup sugar.	1 cup molasses.	$\frac{1}{2}$ cup butter.
1 teaspoon cloves and cinnamon.		

Cheap and very good.

Orange Pie.—Take 1 cup sugar, 1 tablespoon butter, 1 tablespoon corn-starch, 1 teacup boiling water, yolks of 3 eggs, juice and grated rind of 1 orange. Mix all together. Bake in an open shell. When set; cover with a meringue made with the whites of the eggs, and brown in the oven.

Orange Pie No. 2.—Use the grated rind and juice of 2 oranges. Cream 1 tablespoon butter with 4 tablespoons sugar; into this beat the yolks of 3 eggs, then the whites of 2, beaten stiff, and mix all with the orange juice and rind. Bake with an under crust only; make a meringue with the reserved white, spread over the pie, and lightly brown in the oven.

Peach Pie.—Peel and halve peaches, and fill a pie-plate lined with good paste with them; sprinkle $\frac{1}{2}$ cup sugar over the fruit, sift on 1 tablespoon flour (less, if the fruit is not juicy), and a few bits of butter; bake until the peaches are done.

Peach Cobler.—Take a good sized dish like a pudding-dish; line the sides with good paste, and fill the dish with good peaches, halved and pared; sweeten according to taste and the flavor of the peaches. Place a small cup in the center to keep the crust from sinking down; roll out a crust considerably thicker than for pies, just large enough to cover the top of the dish, cut a slit each way in the center and place over the peaches; bake a crisp brown, and eat with cream and sugar, or sweet sauce. Canned peaches may be used if more convenient.

Apple Cobler may be made the same way.

Pear Pie.—The pears should be ripe and mellow enough to eat; core and slice them and prepare a crust as for apple pies; put a small amount of sugar on them, and a few bits of butter, but no spices. Bake until the top crust is of a nice light brown color, and the under crust will slip on the plate. This, from the taste, might be called *honey pie*.

Pine-Apple Pie.—Grate or chop the "Pine" (see Pine-apples in chapter on Fruits), line a deep pie-dish with nice short paste, stir a tablespoon of arrow-root or corn-

starch into $\frac{1}{2}$ cup of sugar and cover the pine-apple in the pie-dish; wet the edge of the under crust with cold water or the white of an egg, cover with the top crust, cutting a place in the center, and bake. Press the edge of the pie all around, and bake until of a delicate brown on top, and the crust will slip on the pie-plate.

Potato Pie.—Use $\frac{1}{2}$ cup melted butter, 2 cups sugar, 3 eggs, well beaten, 1 quart potatoes boiled and sifted, $1\frac{1}{2}$ cups milk, salt and nutmeg, and flavor with orange or lemon juice. Bake with an under crust only, to a light brown. Eat when a little warm.

Sweet-potato Pie.—Boil the potatoes until soft, mash them through a colander and for every $\frac{1}{2}$ pint add 2 tablespoons of sugar and 2 eggs, with milk to make a quart. This fills a deep pie-plate, with crust built above the edge of the plate as for custard pie, and it is done when the center is not milky.

Prune Pie.—Stew prunes as for sauce, stone them, have ready a deep pie-dish lined with puff paste, fill this dish with the stoned prunes, sprinkle over them $\frac{1}{2}$ cup sugar and a little cinnamon. Bake it with an upper crust, or cover it with deep frosting made of the whites of 2 eggs, powdered sugar to taste, and any flavor desired.

Pumpkin Pie.—Pare and stew the pumpkin till it is soft and dry. It must be cooked slowly to the last, to prevent scorching. Press through a colander, and to 1 cup of the sifted pumpkin, add 1 egg, 3 tablespoons molasses, 1 cup of sugar, a pinch of salt, 1 teaspoon ginger (or cinnamon), and 1 pint of milk. This will fill 1 pie on a large plate. Bake like a custard, in rather a slow oven, till a golden brown.

Pumpkin Pie No. 2.—For 3 pies take 1 pint of cooked, strained pumpkin, 1 quart of nice rich milk, 5 eggs, 3 cups of sugar, $\frac{1}{2}$ cup of butter and 2 tablespoons of cinnamon. (Ginger may be used instead of cinnamon.)

In pumpkin or squash pie 1 tablespoon of flour may be substituted as the equivalent of 1 egg.

Raisin Pie.—Take the seeds from 1 cup of raisins, and 1 cup of water and boil until the raisins are soft. When cold, add the juice and grated rind of 1 lemon, 1 cup of rolled crackers, and sweeten to taste. Bake in 1 crust, and when cool cover with a meringue, and slightly brown in the oven.

Rhubarb Pie.—The giant variety with red stalks is the best to use. Cut the stalks in half inch pieces; after it is cut pour boiling water over it and let it stand 20 minutes; pour that off and repeat the process with boiling water; this extracts much of its oxalic acid and partly cooks it without breaking it in pieces. Mix the sugar with a little corn-starch. Bake in 2 crusts. The flavor is improved by adding a little orange. A little nutmeg added to rhubarb pie will improve the flavor and make it taste much like apple.

NOTE.—If a little baking soda is mixed with the fruit (say $\frac{1}{2}$ a saltspoon to each pie) the alkali will neutralize the oxalic acid of the rhubarb and *much less* sugar will be required for sweetening—a fact worth knowing.

Rice Pie.—To 1 cup steamed rice add 3 cups cream; sweeten to taste, and flavor with cinnamon; beat the whites of 2 eggs to a froth, then beat all together and put in a deep pie-plate, with under crust only. Bake about $\frac{1}{2}$ hour.

Squash Pie.—To 1 pint of squash, boiled and passed through a sieve or colander, add 3 eggs, 1 heaping teaspoon corn-starch, 1 teaspoon vanilla, and milk to make it soft; sweeten to taste. This makes a large, thick pie.

Strawberry Pie.—Make a rich butter crust to line the pie-plate; fill in the berries, and for each pie use for sweetening about $\frac{1}{2}$ cup of sugar and a table-

spoon of corn-starch mixed with the sugar; bake with an upper crust, with a strip of cloth pinned around it. It is done when it slips on the plate.

Tomato Pie.—Into a tin lined with puff paste, slice ripe tomatoes; sweeten with sugar; sprinkle on 2 teaspoons flour, and add a little lemon juice for flavor; put on a top crust and bake.

Transparent Pie.—Take yolks of 3 eggs, 3 tablespoons of sugar, $1\frac{1}{2}$ tablespoons of butter; beat well together, flavor to suit taste, and bake in 1 crust only of rich puff paste. Cover with a meringue, if desired.

Vinegar Pie.—Take 1 cup sugar, $\frac{1}{2}$ cup vinegar, 1 tablespoon butter, 3 tablespoons of flour, 2 cups of water, 1 teaspoon of cinnamon. Boil till thick, pour into the crust and bake.

Washington Pie.—For the crust, use 2 cups sugar, $\frac{1}{2}$ cup butter, 3 cups sifted flour, 4 eggs, $\frac{1}{2}$ teaspoon cream tartar; for the filling, 1 tablespoon corn-starch, boiled in $\frac{1}{2}$ pint milk; beat the yolk of 1 egg very light, and stir into the milk; flavor with vanilla, and, when cold, add the other half of the milk and the white of the egg, beaten to a stiff froth and stirred in quickly; spread this between the cakes, and ice it with the white of 1 egg and 8 tablespoons of finely sifted sugar, flavored with lemon.

TARTS.

Tartlets.—Cut rounds of rich pie-crust, put a strip of the same around the edges and bake; when wanted, a little jam, jelly or preserves can be placed in each one before serving.

Cranberry Tart.—Stew a pint of cranberries with a very little water, and sweeten while hot. When cold, if not sweet enough, add more sugar. Bake with an under crust, and when the tart is cool cover with a meringue, and brown in the oven.

Gooseberry Tart.—Stew the gooseberries until they are soft, in a very little water, but be careful and not break them; drain the water from them, put them on a bottom crust, sprinkle a layer of sugar over them, then lay twisted strips of puff paste across in diamond shape, or bake the crust separately in heart-shapes, (see "Flauns") and lay on the tart after baking in one crust.

Lemon Tarts.—Mix together thoroughly 1 pint sugar, 3 eggs, well beaten, 1 tablespoon butter, and 2 whole lemons grated; set it on the stove, stir until it boils up, and put aside to cool. Fill into tartlets at any time, as it will keep for weeks.

Pine-apple Tarts.—Cut as many heart-shaped pieces of puff paste as the pie is to be divided into; bake them in a tin in the oven until they are light and brown; line a pie-plate with nice pie-crust, or puff paste, and bake that. Take a grated pine-apple, stew until tender in a very little water, then add $\frac{1}{2}$ cup of sugar mixed with corn-starch, and stir until it is thick; then pour it into the baked bottom crust to cool. When cool and solid, brush over the top with the white of an egg, lay a heart of puff paste on each division of the tart, and it will adhere to it when dry. Arrow-root or cracker-dust can be used in fruit pies or tarts if preferred.

Strawberry Tart.—Sprinkle sugar over the berries and let them lie over night; before using, drain off the juice, and bake the fruit in one crust, with strips of paste twisted and crossed over the tart in diamond shape, or puff paste may be baked in heart shape and laid on the tart after it is baked.

The juice drawn from the berries can be boiled with added sugar, and the syrup bottled and sealed while hot, to be used in pudding sauces, or diluted with water for a summer beverage.

Canned strawberries and other small fruits can be made into tarts in the same way by draining off the juice.

Flauns (*Parisian Tarts*).—Stew fresh fruit of any kind as for a compote—that is, it should be somewhat sweeter than for fruit sauce, but not like preserves. Make a plain crust and line pie-plates, cover them thickly with the stewed fruit, and bake without an upper crust. Have some nice puff paste, cut it with a heart-shaped cookey-cutter, and bake the hearts separately in a hot oven on baking-tins; when the flauns are cold, and the paste cooled after baking, brush over the tops of the tarts with the beaten white of an egg; then place a heart of paste over each part of the tart to be cut for each person; the points of the hearts are to be turned toward the center of the tarts.

SHORTCAKES.

Make a soft dough as for baking powder biscuit (see “Baking Powder Biscuit”); take it on the molding-board and divide the dough into 2 parts, making it up lightly in round masses; do not mold or knead it, but flatten each piece of dough down into buttered jelly-cake tins, or any round pans; bake quickly and turn each one on to a dinner plate; slice off the top of each one, butter each piece, spread with the prepared fruit, place one-half on the other, and have fruit on top. This makes 2 cakes, which, cut in quarters, will serve 8 persons. For 1 cake use $\frac{1}{2}$ cup milk for mixing, and other ingredients in proportion.

The fruit used should be prepared with sufficient sugar and ready at hand, so that there will be no delay when the cakes are taken from the oven.

A little fine white cornmeal added to the flour in making shortcake is thought an improvement and much relished by some people.

Strawberry Shortcake.—Prepare the cake as above, split it, butter, and spread on the berries. If small they can be sweetened and spread on whole; if large they can be mashed or chopped and sweetened, and then spread on. Chopping is better than mashing the berries. Serve with cream.

Apple Shortcake.—As soon as the cake is baked, split it open, spread one piece with butter, spread it with well-sweetened apple sauce, pour on some thick sweet cream, grate on nutmeg, then lay on the other piece and cover it the same way.

Banana Shortcake.—Slice the bananas and mix with oranges in the proportion of 3 bananas to 1 orange; grate the outside of the orange peel and mix it with 1 cup of sugar; spread the whole over the buttered cakes. It is an improvement to add 4 tablespoons of sweet cream, beaten stiff.

Berry Shortcakes.—Any of the small berries, like raspberries, blackberries, or blueberries, make nice shortcakes. Sweeten the berries and make like strawberry shortcake. *Black and red raspberries* mixed, or *raspberries* with a few ripe *currants* mixed in, make delicious shortcakes.

Cranberry Shortcake.—Stew the cranberries, make them quite sweet, and spread on the prepared cake.

Fruit Shortcakes.—Any kind of stewed or canned fruit can be used for shortcake. Apples, rhubarb, or pears stewed and sweetened to taste are nice.

Jam Shortcake.—Bake the shortcake, split it, and spread on raspberry or other jam, as for layer cakes, only thicker. Serve with cream.

Peach Shortcake.—Slice and sweeten the peaches, and spread on the buttered cakes, as directed for other shortcakes.

Apricots, or any other kind of fruit, may be used the same way.

Orange Shortcake.—Make a shortcake, as before described; then slice oranges, and put in layers of these, with sugar and cream. Serve with sweetened cream.

PUDDINGS AND DUMPLINGS:

In making pudding all the materials—butter, eggs, milk, and fruit—should be good. After cutting *suet* into slices and freeing it from fibrous matter, chop it finely, dredging it lightly with flour during the process to keep the pieces from sticking together. Suet or milk, which is tainted in the least, will ruin a pudding. *Fruit*, when added, should be stirred in the last thing, the same as with cake. *Wet fruit* will make the pudding heavy, so have it *dry* before putting it in the pudding. The rules for preparing raisins and currants are the same as for "Cake" (which see). See also what we say there about grating lemon or orange peel. Have all spices and almonds, which are used, finely powdered. Break eggs separately, for 1 bad one will spoil the others; beat yolks and whites separately. It is a good plan to strain the yolks; add the whites last. A pinch of salt is an improvement to all puddings, but add it sparingly, as its flavor should not be detected. Do not add eggs to boiled milk till it cools a little, or they will coagulate into little lumps. Sugar should be used sparingly, as an excess of sugar is the cause of many a broken pudding. The ingredients for pudding are generally better for being mixed some time before they are wanted. A batter pudding is better for standing a while. When you make a batter pudding, first mix the flour well with milk, and stir in the other ingredients by degrees; it will then be smooth and quite free from lumps. Another good way is to strain it through a coarse hair sieve.

To *boil puddings*, the correct method is to put them at first into *boiling* water, and it should be *kept boiling* until they are done. Never keep them *simmering* in moderately hot water, as active *boiling* is what they need. The principle is the same as described for cooking vegetables. Always beat up the pudding just before pouring it into the cloth. Keep the pudding *covered* with water, and if it boils away pour in more water which is *boiling*. Move puddings occasionally, to keep them from sticking to the kettle. An inverted plate or saucer in the bottom of the kettle will save the pudding from burning or sticking to the bottom. When the pudding is done, lift it out and dip it at once in cold water, let it stand to cool a minute, and the cloth will not adhere to it, nor will it break; untie the cloth and turn it away from the pudding, place a hot dish on top of it, and turn the pudding into it. If boiled in molds, treat the same way. Serve immediately, for if a pudding is allowed to stand, it will darken, fall, and be ruined. When preferred, the pudding may be boiled in a basin, but first grease the basin or mold well, and after putting in the pudding, tie a floured cloth over it.

The Cloth Used.—A thick cloth is best for boiling large puddings. Canton flannel, with the nap side out, is excellent, although some cooks use muslin. Dip the cloth into boiling water before putting in the pudding, then wring it, spread it over a basin, and dredge it evenly and thickly with flour; then put in the pudding, gather up the corners of the cloth, and tie them. If it is a bread pudding, tie it loose; if a batter pudding, tie it nearly close; fruit puddings should be tied quite close. As soon as possible after it is taken off of the pudding the cloth should be soaked in water, and then well washed, without soap unless it is very greasy. Then dry it well, fold it up, and keep in a dry place. It is perhaps needless to state that there should be no holes in the cloth.

Steaming.—As a rule, puddings will be lighter and better if they are steamed rather than baked or boiled. Put the steamer over cold water, and during the whole process of steaming do not remove the cover. A thick cloth tied over the dish in which they are steamed will make the pudding lighter and absorb much of the moisture.

Baking.—When baked puddings are sufficiently solid, turn them out of the dish they were baked in, bottom uppermost, and strew finely sifted sugar over them. If the outside of baked puddings are sufficiently brown, and yet they are not baked through, put a piece of white paper over them which will prevent the top from burning before they are thoroughly cooked. Puddings made of custard

require more care in baking than others, and should never remain in the oven until they become watery; they will be thicker and richer if made with 1 egg and baked slowly, than if made with 3 eggs and baked quickly. Any pudding in which milk and eggs are used, will separate if the oven is too hot, and it should therefore be cooked at a low temperature.

Dumplings.—In putting dumplings of any kind into water to boil, put them in one at a time, as they will mix or stick if put in together.

Puddings are less expensive than pies, and they are also much more wholesome.

To Cream Butter.—In making cake and the better class of puddings it is often desirable to beat the butter to a cream before using it. Put the butter in an earthenware vessel (but do not use tin or iron, as they will discolor it), and beat it with a spoon or fork—a wooden or silver fork or spoon is best. After beating it about, the butter gradually comes back into a creamy state, but thicker than cream itself, and is then “creamed butter.” If cold, warm the vessel by pouring hot water in it; then wipe it dry before using it.

ALMOND PUDDING.

1 pint of milk.	3 eggs.	3 tablespoons of flour.
2 ounces of almonds.	1 teaspoon essence lemon.	1 ounce of butter.
4 ounces of sugar.		

Boil the milk and let it cool; beat the eggs lightly with the flour; blanch the almonds, and pound in a mortar to a paste with the essence of lemon, or use peach water; melt the butter in the milk, add the sugar pounded, and beat all well together. Bake in buttered cups, or small molds.

Apple Pudding.—Use $1\frac{1}{4}$ lbs. peeled apples; make it into apple sauce, sweeten and spice to taste, add 4 eggs, a piece of butter $\frac{1}{2}$ the size of an egg, and flour to stiffen; bake in a quick oven. Serve with sauce, or sugar and cream.

APPLE INDIAN PUDDING.

1 cup Indian meal.	2 quarts milk.	3 tablespoons butter.
1 cup molasses.	2 teaspoons salt.	1 quart apples, pared and quartered
A little ginger and nutmeg.		(not too sour).

Scald the milk and pour it gradually on the meal; put this in the double boiler and cook $\frac{1}{2}$ hour, stirring often. Butter a deep pudding dish, add molasses, butter, spices and apples to this mixture, and bake in a slow oven 3 hours. If any remains, it may be eaten cold with cream or milk next day.

BERRY PUDDING.

1 cup milk.	1 egg.	2 tablespoons baking powder.
3 cups flour.	1 tablespoon melted butter.	$1\frac{1}{2}$ cups berries or fruit of any kind.

Steam 2 hours.

No. 2.—Mix 1 cup sugar ($\frac{1}{2}$ cup will do very well), 2 tablespoons butter; add 2 cups flour with 2 teaspoons baking powder sifted into it, a pinch of salt, 1 cup milk and 1 egg; cover a buttered pudding dish thick with berries, pour this batter over them, and bake about 20 minutes. This is delicious with fresh blackberries, but is nearly as good with apples peeled and sliced, or with *canned* huckleberries or blackberries. For sauce, use 3 tablespoons sugar, 2 tablespoons butter, 1 egg, and flavoring.

BIRD'S NEST PUDDING.

Flour enough to make a stiff batter.	1 egg.	A little salt.
1 pint sour milk.	1 teaspoon of soda.	

Pare 4 or 5 apples, take out the cores, place in a buttered dish and pour over the batter. Bake about $\frac{1}{2}$ hour. Use hard sauce or cream.

Black Pudding.—Sift 2 teaspoons baking powder into 1 cup flour, add 1 teaspoon cinnamon, $\frac{1}{2}$ teaspoon ground cloves, a pinch of salt; wet with milk till smooth, and add 1 cup molasses, 1 tablespoon butter, 1 egg; bake in a greased pudding dish $\frac{3}{4}$ hour. Use foam sauce or hard sauce.

BREAD PUDDING.

$\frac{1}{2}$ cup white sugar. 1 cup of raisins (if desired). 1 heaping teaspoon of butter.
2 eggs (beaten thoroughly). 1 pint of bread crumbs soaked in 1 quart of sweet milk.

Salt to suit the taste. Stir well together and bake.

BREAD PUDDING NO. 2.

1 quart of milk. 3 eggs. $\frac{1}{4}$ teaspoons vanilla extract.
1 pint bread crumbs. 1 small cup sugar. A small piece of butter.

Beat the yolks of eggs and stir them with the rest of the ingredients, reserving the whites for the top. Bake the pudding 25 minutes, then take it from the oven, spread a layer of currant jelly over the top; beat the whites of the eggs to a stiff froth, with 1 tablespoon of sugar, spread this on top of the jelly, return to the oven to brown on top. Raspberry jam is equally as good as jelly for this pudding. Serve with cream. If you do not happen to have that, a hot sauce is very good. Almost any kind of fruit, stirred in a common bread pudding, makes a very nice dessert of it. Cranberry sauce or jelly is very good in bread pudding.

Black Bread Pudding.—Cut stale bread in even slices, pare off the crust, and butter each slice; put the largest slice on a platter, cover it with canned huckleberries or blackberries which are heated scalding hot; put on another slice, cover it with the berries, and so on till all is used, and you have a neat mound of pudding. This may be covered and kept hot in the warming closet until serving time, and eaten with hard sauce, or made early in the day and served cold with sugar and cream—it is delicious either way. If the berries are very sweet adding 2 or 3 tablespoons of vinegar is an improvement.

STEAMED BREAD PUDDING.

1 pint bread crumbs. 1 cup flour. 1 tablespoon melted butter.
1 cup molasses. 1 cup raisins. 1 egg.
1 cup hot water poured on the bread. 1 teaspoon soda. Spices to taste.

Steam 2 hours. Good and inexpensive.

Bread Crumb Pudding.—Take 1 teacup of dried bread crumbs (see Dried Bread Crumbs elsewhere given), soak with boiling water, add 2 cups milk, 2 eggs, a full $\frac{1}{2}$ cup of sugar, a pinch of salt, a teaspoon of flavoring, and bake. It will be an improvement to cover with a meringue and brown in the oven when cool; or spread a little jam on top.

Cake Pudding.—Soak slices of stale cake in lemonade and lay them in a pudding dish. Pour over it a soft custard, and cover it with a meringue; then place it in the oven to brown slightly. To be eaten cold.

No. 2.—Cut thin slices of stale cake of any kind, enough to fill a pudding dish $\frac{3}{4}$ full; then make plain "sweet sauce" enough to cover all, and let it stand in the oven until time to serve. A little lemon, or other fruit juice, can be added to the sweet sauce if liked.

No. 3.—Put any kind of stale cake in a steamer $\frac{1}{2}$ hour before dinner, and steam it through; prepare a sauce by taking $\frac{1}{2}$ cup sugar, 1 even tablespoon of flour, a little water to moisten; stir well together, pour in $1\frac{1}{4}$ cups boiling water, grate in a little nutmeg, and boil 10 minutes; add a spoonful of vinegar, and serve with the cake cut up in thick slices.

Canned Pudding.—Soak and wash 1 pint of tapioca, add 3 pints of warm water, and let it stand 3 hours in a kettle of boiling water; then place in glass fruit jars a layer of sliced peaches, with sugar enough to sweeten them, then a layer of tapioca, adding alternate layers until the cans are filled; then set them in a kettle in $\frac{3}{4}$ their depth of water, let the water come to boiling and keep the jars in $\frac{1}{2}$ hour; then take them out and seal them. A thickly folded cloth must be under the jars to keep them from touching the bottom of the kettle. Tapioca

and apples can be canned in the same way. Serve either hot or cold, with sweetened cream, or any liquid sauce. This canned pudding is convenient in case you need a dessert in a hurry.

Charlotte Pudding.—This favorite dessert is made by buttering a mold, then line it with thin slices of bread well buttered, with a well-buttered slice on the bottom of the mold; fill with nice baking apples pared, quartered and cored, seasoned with sugar and spices to taste; cover it with a thin slice of bread well buttered; put a plate or tin cover over that, and bake 2 hours. Sponge cake may be substituted for bread, or slices of any plain cake, if it is preferred.

Cherry Pudding.—Put pitted and sweetened cherries an inch deep or so, in the bottom of a pudding dish. Take 1 cup sugar, beaten to a cream with 2 table-spoons butter, add 1 egg, 1 cup milk, 2 cups flour, and 2 teaspoons baking powder; mix well, flavor with nutmeg or lemon, pour over the cherries, and bake. Then turn from the dish, having the fruit on top; and serve with warm sweet sauce.

Chocolate Pudding.—Whip to a cream 1 cup sugar and $\frac{1}{2}$ cup butter; add $\frac{1}{2}$ pint of milk, and the yolks of 2 eggs well beaten; add 1 pint of flour and 1 oz. of chocolate or cocoa which has been melted over hot water and beat until smooth; then add the whites of the 2 eggs, beaten stiff, and 1 teaspoon baking powder; put it in cups, and steam $\frac{3}{4}$ hour.

CHRISTMAS PUDDING.

1 cup finely chopped suet.	1 cup sugar.	1 even teaspoon soda.
1 cup seeded raisins.	1 cup Zante currants.	Cinnamon and allspice to season.
1 egg.	1 cup molasses.	
1 cup flour.	1 even teaspoon salt.	

Prepare the day before the pudding is cooked. Wash the currants and pick over carefully; then put them wet into a cooking bowl to stand over night, and all the other ingredients excepting the flour and soda; beat well. The next morning add the flour and soda, and beat, and stir together again; put in the pudding basin or mold, and steam 4 hours. The water must boil in the steamer-kettle, and be kept boiling until the pudding is taken up. Hot water from the tea-kettle can be added as needed.

Cocoanut Rice Pudding.—Soak 1 cup of rice in water 3 hours, then add 1 pint of milk and cook gently until it is tender; beat 5 eggs and 1 cup of white sugar together, add another pint of milk, a little salt and the rice, mix well, flavor with lemon and pour into a buttered bowl and boil steadily for 1 hour; dip the bowl into cold water after it is cooked, and let it stand about 10 minutes, turn out into a flat dish and strew all over with desiccated cocoanut. Serve with a custard sauce, flavored.

CORN PUDDING.

12 ears of corn.	1 quart of milk.	Salt and pepper to taste.
4 eggs, thoroughly beaten.	3 tablespoons of sugar.	

Scald the corn, then grate it, add the other ingredients, and pour into a pudding dish. Bake slowly.

CORN-STARCH PUDDING.

1 quart of milk—less 1 cup.	1 teaspoon vanilla.	$\frac{1}{2}$ cup of sugar.
2 tablespoons corn-starch—in a little milk.	2 eggs, beaten light.	

Let the milk and sugar boil before putting in the eggs, starch or vanilla. Save out the whites of the eggs for frosting, if you like.

Corn-starch, as its name indicates, is the starch extracted from Indian corn. It is light and easily digested but is not very nutritious, as it is about 84% starch, and 15% water.

NOTE.—It should be understood that starch to be digestible should be cooked about 20 minutes, and that it is not cooked as soon as *swollen*, as many cooks imagine. There is danger of cooking corn-starch too short a time, and so leaving it indigestible, and with a raw taste.

COTTAGE PUDDING.

1 cup of suet.
1 egg.
1 cup of sweet milk.

2 cups of flour. Bake $\frac{1}{2}$ hour. Eat with hot sauce.
1 teaspoon cream tartar.
 $\frac{1}{2}$ tablespoon soda.

BAKED COTTAGE PUDDING.

1 pint of flour.
1 small cup of sugar.

1 cup of milk. 2 teaspoons of baking powder.
1 tablespoon of butter.

STEAMED COTTAGE PUDDING.

3 tablespoons melted butter.
1 teacup sugar beaten together.
1 egg.

1 cup milk. Steam $\frac{1}{2}$ hour.
2 teaspoons of baking powder.
2 cups of flour.

Cracker Pudding.—Put a layer of split crackers in a deep pudding dish, put on raisins, cinnamon, nutmeg and a little salt, and fill it $\frac{1}{2}$ full with alternate layers in this way, packing it down tightly; then put a plate over it, fill the dish with milk, and let it stand several hours to soak. Then beat 2 eggs with 1 cup sugar, pour off any milk not absorbed, and mix it with the eggs, adding more milk if needed; pour this over the pudding, leaving on the plate to keep it in shape, and bake about 2 hours. It should retain its shape when turned out, if right. Good either hot with sauce, or cold.

Delmonico Pudding.—Mix 3 tablespoons corn-starch with a little cold milk, stir it into 4 cups milk, and add 6 tablespoons sugar and 5 yolks of eggs beaten together; boil 4 or 5 minutes, pour it in a pudding dish, and bake 30 minutes. Beat 6 tablespoons sugar and the whites of the eggs together, spread it on top of the pudding, and brown it delicately in the oven.

ECONOMICAL PUDDING.

$1\frac{1}{2}$ pints stewed apples.
1 cup cream.

$\frac{1}{4}$ pound butter.
4 eggs.

Grated lemon peel and sugar to taste.

Put in the butter while the apples are hot; the remainder when cool. Dried apples will do. Bake in a quick oven in a deep pie-tin, covered with crust.

ENGLISH PUDDING.

1 cup suet.
1 cup raisins, chopped.
1 cup molasses.

$3\frac{1}{2}$ cups flour.
1 cup of milk or cider.
 $\frac{1}{2}$ teaspoon soda dissolved in the molasses.

Add salt.
Steam 3 hours.

Farina Pudding.—Boil a quart of milk and water, half and half; add a level teaspoon of salt, then slowly sprinkle in farina until it is a thin mush; turn into small cups or molds to harden. Serve cold, one to each person, with sugar and cream, or any favorite liquid pudding sauce. This is a good dessert for hot weather, and particularly relished by invalids and children. This pudding can be mixed with milk, sugar and eggs, and baked like a rice pudding.

Gooseberry Pudding.—Cook the gooseberries until soft, in as little water as possible, rub them through a sieve, and add 2 tablespoons butter, 3 eggs well beaten, 1 teacup bread crumbs, $\frac{1}{2}$ teacup sugar; put a border of puff paste around the edge of a pudding dish, beat the mixture well, or until very light, put it in the dish, and bake 40 minutes. As soon as it is done strew sugar over it thickly, and serve at once.

Gold Pudding.—To the well-beaten yolks of 3 eggs, add $\frac{1}{2}$ cup sugar, 1 tablespoon butter, 1 teaspoon baking powder in flour enough to make a fairly stiff batter, a little salt, and 1 cup seeded raisins; beat all well together, and steam 1 hour. Serve with our white pudding sauce. The pudding will be a golden yellow, and with the white sauce will please both eye and palate.

Graham Pudding.—Take 1 cup raisins seeded and chopped, 1 cup molasses, 1 teaspoon soda dissolved in 1 scant cup sweet milk, $\frac{1}{2}$ teaspoon salt, 2 cups graham flour; steam 3 hours. Fine.

Steamed Graham Pudding.—Beat together 3 eggs and 3 tablespoons sugar, add

1 tablespoon melted butter, $\frac{1}{2}$ cup sour cream, 1 cup sour milk, 1 teaspoon soda sifted into 3 cups graham flour; add dried cherries, or pour over sliced apples, if fruit is desired, and steam. It is nice with or without fruit. Eat with cream and sugar.

Hanover Pudding.—Sift 2 teaspoons baking powder into $2\frac{1}{2}$ cups flour, add a pinch of salt and some spices (say cinnamon and nutmeg), 1 cup suet or $\frac{1}{2}$ cup butter, $\frac{3}{4}$ cup molasses, 1 cup milk, 1 egg, 1 cup stoned raisins; boil $2\frac{1}{2}$ to 3 hours. Eat with hard sauce, or any liquid sauce preferred.

Baked Indian Pudding.—Stir gradually 1 even cup cornmeal in 1 quart of boiling milk, let boil a few minutes, lift from the stove, and add 1 teaspoon butter and a little salt; stir in $\frac{1}{2}$ pint molasses, and $\frac{1}{2}$ pint cold milk last; put into a pudding dish, well buttered, and bake 3 hours in a moderate oven.

No. 2.—In 1 quart boiling milk, stir $1\frac{1}{2}$ cups cornmeal, and 1 cup molasses; let it cool and add 1 teaspoon salt, 1 teacup suet, and stir in a little allspice; pour in 2 cups cold milk, and bake.

Boiled Indian Pudding.—Warm 2 cups molasses and 2 cups milk, stir well together; beat 4 eggs and stir with the molasses and milk; add 1 lb. beef suet chopped fine, and Indian meal enough to make a stiff batter; add 1 teaspoon each of cinnamon and nutmeg, and a little grated lemon peel; stir together well, tie in the floured bag, leaving room to swell, and boil 3 hours. Serve hot with a good sauce.

No. 2.—Use 1 cup flour, 1 heaping teaspoon of baking powder, 1 teaspoon salt, 2 cups milk, 2 tablespoons melted butter (or 4 tablespoons sour cream), 3 eggs, 1 small pinch of soda, and enough cornmeal to make a stiff batter. Mix in the order given, and pour into a baking-powder can, or any other covered can of convenient size; set in a kettle containing enough boiling water to come up nearly to the top of the can, place a weight on top of the can to keep it upright, and boil about 2 hours. Eat with the maple sugar sauce given among our pudding sauces.

Lemon Pudding.—Use 1 cup milk, 1 tablespoon butter, 1 heaping teaspoon of baking powder, and flour enough to roll out; roll in 3 sheets. Take juice of 1 lemon, 1 cup pulverized sugar, and spread between the layers like jelly. Put it in a tin and steam 3 hours. Serve with our Lemon Sauce No. 1.

LOWELL PUDDING.

1 cup milk.	1 cup raisins.	$\frac{1}{2}$ cup molasses.	$\frac{1}{2}$ teacup brown sugar.
1 teacup suet.	1 teaspoon soda.	1 teaspoon salt.	Flour to make a stiff batter.

Steam 3 hours. Serve with any good sauce.

Minute Pudding.—Use 1 quart sweet milk, 2 eggs, 1 pint sifted flour, 1 level teaspoon of salt; beat the eggs well, add the flour, and milk enough to make it smooth. Butter the kettle, and put in the remainder of the milk with the salt; when it boils, put in the eggs and flour, and cook until stiff. Serve hot with any simple sauce.

No. 2.—Use 1 cup of water, 1 cup sweet milk, salt to taste; let it boil and stir in flour until it is a stiff batter; the flour must be stirred in very gradually, to avoid large lumps. Serve immediately with cream and maple sugar.

Graham Flour Minute Pudding.—Take $\frac{1}{4}$ water and $\frac{3}{4}$ milk, and when it boils stir in graham flour the same as if water alone was used, except that it should be made a little thicker. Cook about 10 minutes. Eat with sugar and cream. If you do not happen to have cream, jelly makes a nice sauce. Children are very fond of this simple pudding.

Orange Pudding.—Boil 2 cups milk; beat 2 eggs light, add 3 tablespoons sugar, grate in the yellow of 1 orange, pour in the milk hot, and beat 2 minutes; set the

pan in a larger pan, filled with water, and put in the oven until set; sprinkle with sifted sugar, brown on top with a hot shovel, and cool. Eat with cream.

No. 2.—Pare and slice 6 oranges, beat the yolks of 4 eggs with 1 small cup of sugar, and pour over the oranges; then beat the whites to a stiff froth, flavor with vanilla, and pour over all; do not cook, but keep on ice till served.

Oxford Pudding.—Take 1 cup rice, 1 tablespoon oatmeal, 3 tablespoons sugar, 1 teaspoon salt (level), 1 cup milk, 6 cups water; stir together, and bake 2 hours in a moderate oven.

Peach Pudding.—Drain the liquor from a can of peaches, and wet ceroline with it, but do not make it too thick to pour, add 2 eggs, well beaten, $\frac{1}{2}$ cup sugar, and a little salt; pour this mixture into a buttered pudding dish, drop the reserved peaches into the center of the mixture, and bake 15 to 25 minutes. Good hot or cold, and without sauce.

Steamed Peach Pudding.—Fill a pudding dish with alternate layers of bread crumbs sprinkled with butter, and sweetened, sliced peaches, having a layer of bread crumbs on top; pour over this a custard made of 2 cups milk, the yolks of 2 eggs, and 2 tablespoons sugar; steam it, and serve with Lombard Sauce.

PLAIN PLUM PUDDING.

2 cups bread crumbs.
1 teaspoon of spices.
1 teaspoon of salt.

2 cups seeded raisins.
2 cups chopped suet.
1 cup of flour.

2 cups milk or water.
2 cups washed currants.
3 cups sugar.

Mix all the ingredients to make a stiff batter; if it is too thick, add more water, and if too thin, add more flour; then stir in 2 teaspoons of baking powder, beat it well, tie loosely in a pudding-cloth, so that it will have room to swell, and boil 4 hours. It can be placed in a mold or tin basin, with a plate to cover it, and steamed for the same length of time, if more convenient. Serve with lemon pudding sauce.

ENGLISH PLUM PUDDING.

3 eggs.
 $\frac{1}{2}$ cup citron.
3 cups flour.
 $\frac{1}{2}$ teaspoon spices, nutmeg.
1 cup chopped suet, salt.

1 cup of raisins.
 $\frac{1}{2}$ cup candied lemon.
1 cup molasses.
2 even teaspoons of cream of tartar.
Steam 4 hours.

1 cup currants.
1 cup sweet milk.
1 cup brown sugar.
1 teaspoon of soda.

Potato Pudding.—Take 1 lb. of boiled potatoes mashed with sweet milk; add $\frac{1}{2}$ lb. white sugar, 6 eggs, and 1 grated lemon; bake 40 minutes.

Pnff Pudding.—Scald 1 quart sweet milk, stir in 18 tablespoons of flour; when cool, stir in 6 well-beaten eggs; bake 20 minutes. Serve with butter and sugar.

Steamed Pnff Pudding.—Make a batter by sifting 2 teaspoons baking powder and a little salt into 2 cups flour, and add milk enough to make it quite soft; butter coffee-cups and put them in the steamer; drop in first a spoonful of batter, then 1 of berries, steamed apples, or any fruit or sauce you happen to have; then put in batter to fill the cup, and steam 25 minutes. Serve with our berry pudding-sauce, using the same fruit for the sauce that you have in the pudding.

Queen Pudding.—Use 1 pint of bread crumbs, 1 quart of milk, 1 teacup white sugar, yolks of 4 eggs, grated rind of 1 lemon. Beat yolks, sugar and lemon together, and stir in the crumbs; bake until it is of a nice brown color; when done, beat the whites of 4 eggs to a stiff froth, with 4 tablespoons of sugar; spread fruit jelly or jam over the pudding, then cover it with the frosting and set it, in the oven to brown slightly. To be served cold. No one ever tires of this delicious, old-fashioned dessert.

Raspberry Pudding.—Rub together $1\frac{1}{2}$ cups sugar, and $\frac{1}{2}$ cup butter; add $\frac{1}{2}$ cup milk, and 2 eggs; stir together well, and add 2 cups flour with $\frac{1}{2}$ teaspoon of

baking powder sifted in, and, lastly, add 2 cups fresh raspberries. Steam 3 hours.

RATAFIA PUDDING.

1 quart of milk.
2 eggs.

2 teaspoons of corn-starch.
4 tablespoons of sugar.

$\frac{1}{4}$ pound of ratafias.
Flavor with cinnamon.

Scald the milk in a double boiler; beat the sugar, eggs, and corn-starch together, and stir into the scalding milk, when it thickens, pour it into a well-buttered pudding-dish; cover the top of the pudding with the ratafias—right side upwards—and bake $\frac{1}{2}$ hour. (For directions for making ratafias, see "Candy.")

Rhubarb Pudding.—Butter a basin which will hold $1\frac{1}{2}$ pints, and line it with good suet crust rolled out to the thickness of $\frac{1}{2}$ inch. Fill it with rhubarb which has been stewed for $\frac{1}{4}$ hour, with a little moist sugar and the rind of half a lemon. Cover the pudding with pastry, rolled out to the same thickness as the sides, pinch the edges securely, tie in a cloth, and boil 2 hours, or until done; then turn out carefully, and cut a small opening in the top for the escape of the steam. Serve with sweetened melted butter, or cream and sifted sugar.

Rice Pudding.—Use 1 pint milk, 1 tablespoon washed rice, $\frac{1}{2}$ cup raisins, $\frac{1}{2}$ cup sugar, a little salt and nutmeg. Mix and put to bake; stir 4 times to keep rice and raisins mixed; let it bake until the rice is done. Serve cold with cream and sugar.

A HINT.—It is not generally known that the cheap, broken rice is better for puddings than the more expensive article. One tablespoon of this, well washed, the usual quantity of milk and sugar, and a pinch of grated nutmeg, with a little butter, will make an excellent rice pudding. Bake very slowly.

No. 2.—Soak $\frac{1}{2}$ cup rice in milk till soft, then add 4 cups milk, a pinch of salt, and 2 tablespoons sugar; put in the oven and bake very slowly for 2 hours; it should be of the consistency of jelly when done. The secret of success with this pudding is to bake very slowly, and bake a long time. A cup of seeded raisins is a great improvement if added when it is put in the oven. Thick sweet cream is the best sauce for it, or sugar and cream mixed.

Sago and *Tapioca* puddings made in the same way are delicious, but without any raisins.

No. 3.—Use 2 tablespoons rice, 1 quart milk, $\frac{1}{2}$ teacup white sugar, 1 teaspoon vanilla or lemon; a little salt; scald the rice, then add the other ingredients and scatter on top a little butter cut in small bits. Bake 2 hours in a slow oven. Pour over it $\frac{1}{2}$ hour before it is done $\frac{1}{2}$ teacup cold milk; this will make it creamy.

Roly Poly Pudding.—Use 1 cup chopped suet, 3 cups flour, 1 even teaspoon of baking powder, 1 even teaspoon of salt. Mix the suet, flour, salt, and baking powder together; then with a little cold water make a stiff dough; roll out in a long strip, and spread it with jam, preserves or fruit, leaving a little space at the edges free; wet the edges and roll up the strip. Dip a pudding cloth in hot water; flour it well; put in the pudding, roll, tie up the ends and wind it with a string to keep it in place; boil 2 hours. Serve with sweet sauce with a trifle of lemon juice. The roly-poly can be baked in a buttered pan, if preferred, but without the cloth.

Sponge Pudding.—Use 1 cup butter rubbed into 3 cups flour; 1 teaspoon soda stirred in 1 cup molasses; 1 cup sweet milk; $\frac{1}{2}$ teaspoon cinnamon; $\frac{1}{2}$ teaspoon nutmeg; 1 cup fruit, if liked; steam $1\frac{1}{2}$ hours.

STEAMED PUDDING.

1 cup of molasses.
 $\frac{1}{2}$ cup butter (scant).
1 cup sour milk.
Steam $2\frac{1}{2}$ hours.

1 cup raisins, chopped fine.
1 teaspoon soda.
1 teaspoon salt.

2 teaspoons of cinnamon or instead
[of this $\frac{1}{2}$ a nutmeg].
3 cups flour.

Steamed Indian Pudding.—Use 2 cups milk, 2 eggs, $1\frac{1}{2}$ cups Indian meal, 2

small tablespoons beef suet, 2 tablespoons molasses, $\frac{1}{2}$ teaspoon each of cinnamon and ground ginger. 1 saltspoon salt, a pinch of soda. Heat the milk boiling hot, add the soda and pour it upon the meal; stir well, add the suet, chopped, and the salt; when it gets cold, add the eggs, beaten light, the molasses and spices, and beat all hard. Turn into a well-greased mold, and steam 4 hours. Eat with hard sauce.

SUET PUDDING.

1 cup of chopped suet.
1 cup of seeded raisins.
1 cup of molasses.

1 cup of sour milk.
3 cups of flour.
1 egg.

1 teaspoon of salt.
1 teaspoon of soda.
Steam 2 hours.

SUET PUDDING NO. 2.

1 cup molasses.
1 cup sweet milk.
1 cup suet, chopped fine.

1 cup of raisins.
 $\frac{1}{2}$ cup dried currants.
 $2\frac{1}{2}$ cups flour.

$\frac{1}{2}$ teaspoon of soda.

Mix well, add salt and spice to taste, and steam 2 hours. Eat with liquid sauce. If suet is objected to, or cannot be obtained, $\frac{1}{2}$ cup of butter may be used. Be sure the pudding is thoroughly done. This is a good pudding to follow a picked up dinner, or if the supply is a little short, as it is rather substantial.

Tapioca Pudding.—Soak 1 cup tapioca for 2 hours in cold water enough to cover it; if not all absorbed drain off what is left; add 1 quart of milk, and soak 2 hours longer; when the tapioca is quite soft, beat together 2 tablespoons melted butter and 2 tablespoons of sugar. Add this to the tapioca with the yolks of 4 eggs beaten light; stir well and bake till brown on top; then add the whites of the eggs, beaten to a froth with pulverized sugar, and return to the oven to brown. Be careful to see that there are no hard lumps left. Eat either with or without sauce.

Sago pudding may be made the same way.

Rice pudding can be made the same way, and can be made more dainty by adding the juice and grated rind of a lemon to the frosting.

Apple Tapioca Pudding.—Put 1 cup tapioca in 1 quart of cold water, and let it soak slowly on the stove until thin like starch; have the apples peeled and quartered and in a pan ready to bake; season the soaked tapioca with sugar, butter and nutmeg, pour it over the apples, and bake till done.

Cocoanut Tapioca Pudding.—Soak 3 tablespoons of tapioca in water over night; then put it in 1 quart of boiling milk and boil $\frac{1}{2}$ hour; beat the yolks of 4 eggs with 1 cup sugar, add 3 tablespoons prepared cocoanut, stir it in, boil 10 minutes longer, and pour into a pudding dish. Beat the whites of the 4 eggs to a stiff froth, stir in 3 tablespoons sugar, put this over the top with a little cocoanut sprinkled over it, and brown 5 minutes in the oven.

TAPIOCA is the starch extracted from the root of a plant which grows in South America. It is light and easily digested, but as it is about 83% starch it is not very nutritious. When used for puddings crushed tapioca is better than that in large granules.

CASSAVA is the starch from the same root more highly granulated. It is called *manioc* in Brazil, and *yucca* in Peru.

SAGO is a starch obtained mainly from the pith of the sago palm. A single tree is said to yield 500 to 600 lb. of sago. It is mainly starch, is easily digested and so is adapted to invalids, but is not very nutritious. *Portland sago*, or *Portland arrow-root* is a starch obtained from the tubers of a species of arum.

WHORTLEBERRY PUDDING.

2 cups sugar.
2 cups bread crumbs.
1 quart of milk.

4 cups flour.
6 eggs.
2 heaping teaspoons baking powder.

1 tablespoon of salt.

Make to a stiff batter, and mix in 1 quart of whortleberries. Put it in a buttered mold, and steam 3 hours. Half this will do for a small family. Serve with any liquid pudding sauce preferred.

Apple Dumplings.—These may be either baked or boiled; if baked, they should

be made with pastry; if boiled, use a light suet crust. In either case pare the apples and scoop out the core, filling up the space with sugar and a clove, or some grated lemon peel.

For baked dumplings make a light puff paste, enclose the apples in it, making as many as desired, push the edges so closely that no seam can be seen, and bake 20 minutes in a good oven. Eat with a rich pudding sauce, or with maple syrup.

For boiled dumplings chop $\frac{1}{4}$ lb. beef suet very finely, add $\frac{1}{2}$ lb. flour, a little salt and baking powder, and mix with water enough to give it consistency; roll out twice on the pastry board, enclose the apples as for baked dumplings, put them in boiling water, and boil fast 1 hour. Drain, and serve with sweet sauce.

CHERRY DUMPLINGS.

$\frac{1}{2}$ cup sugar.	2 heaping tablespoons lard.	2 cups sweet milk.
2 cups stoned cherries.	1 cup prepared flour, or use flour and baking powder same as for biscuits.	A little salt.

After rubbing the lard into the salted flour, add the milk, then roll out $\frac{1}{4}$ inch thick. Cut into squares, and into the middle of each one put 2 spoonfuls of the stoned cherries. Add sugar, and then bring the edges together and pinch closely. Bake until done on a floured baking-pan, with the joined edges at the bottom. Eat while hot.

Huckleberry Dumplings.—Use 1 tablespoon lard, 4 cups flour, 1 cup milk, 3 teaspoons baking powder. Sift the baking powder into the flour, work in the lard, and add the milk; when rolled out, cut rather larger than biscuit; after putting in the berries, close the edges tightly, and boil (or steam) 20 minutes.

Jam Dumplings.—Roll out a puff paste, and spread jam (raspberry or any other) on it; make into dumplings and boil till done—about 1 hour usually. Serve with melted butter and sugar for sauce.

Steamed Dumplings.—Pare and quarter nice tart apples, place them in a deep dish, adding a little water; make a crust as you would for tea biscuit, with sour cream, or rich buttermilk, if you have it; if not, use a good baking-powder recipe; roll out about 1 inch thick, place it over the apples, and steam $\frac{1}{2}$ hour. Serve with a sauce made of $\frac{1}{3}$ butter to $\frac{2}{3}$ sugar, beaten to a cream.

Fruit Dumplings of any kind can be made in this way, using any kind of fruit, either fresh or canned.

Pandowdy.—Pare, core, and slice thin, sour, juicy apples; butter a deep dish and put in a layer of apples, sweeten with brown sugar and flavor with lemon peel; strew over it a layer of bread crumbs, and bits of butter; repeat alternately till the dish is full, finishing with a layer of bread crumbs. Bake till the apples are soft. A little cider improves it. To be eaten with sweetened cream.

PUDDING SAUCES.

Do not boil a sauce after adding the butter. If sugar and cream are served for a pudding sauce, pass them separately, letting each one use what their taste desires.

Caramel.—This makes a fine flavoring for sauces as well as soups, and can be prepared as directed for soups. The prepared caramel can be used if you have it on hand. (See our recipe elsewhere for preparing it.)

Caramel Syrup.—Sprinkle a tablespoon of sugar over the bottom of the frying-pan and put over the fire until it bubbles brown and begins to smoke, but do not let it burn black; then add a pint of water, and let it boil until the caramel is dissolved; then add 2 cups granulated sugar and melt to a syrup. If liked

heavier, add more sugar. This makes a fine substitute for maple sugar, and has much the same flavor. It is also excellent with griddle cakes.

Substitute for Cream.—Use 2 cups sweet milk, yolk of 1 egg, 1 teaspoon of flour, sugar to sweeten, and any flavoring desired. Boil the milk, beat the egg and flour with sugar enough to make quite sweet; stir this into the milk when that boils, and let it simmer (not boil), stirring it well; flavor to taste when it cools. This is better than thin cream, and good for any pudding in which eggs are used.

Acid Pudding Sauce.—Mix together thoroughly 1 cup sugar, $\frac{1}{2}$ cup butter, and 2 tablespoons flour; add a little vinegar or juice of some acid fruit, and a little nutmeg; pour on about 2 cups of boiling water, and boil a few minutes.

Berry Pudding Sauce.—Use 2 eggs, $\frac{1}{2}$ cup butter, and 1 cup sugar beaten well, with 1 cup boiling milk, and 1 cup of berries, steamed apples, or any fruit (chopped) you may have.

Brown Pudding Sauce.—Take the yolk of 1 egg, $\frac{1}{2}$ cup of butter, 1 cup of sugar; stir all to a cream, and add the whites of 2 eggs, and a little nutmeg.

Cider Sauce.—Use 1 tablespoon of flour, 2 tablespoons of butter, 4 tablespoons of boiled cider, 1 cup brown sugar, $\frac{1}{2}$ cup boiling water. Mix the flour and butter, stir in the sugar and cider, add the boiling water, mix all thoroughly, and simmer a little while.

Cream Sauce.—Whip 1 cup cream and $\frac{1}{2}$ cup powdered sugar; add 1 teaspoon vanilla and the white of 1 egg beaten stiff; beat all together and serve cold.

Sweet cream, either alone or sent with white sugar, makes an excellent sauce for most puddings; it is sometimes flavored. Whipped cream is also often used.

Delicate Pudding Sauce.—Scald a teacup of sweet milk, beat the yolks of 2 eggs with $\frac{2}{3}$ cup of brown sugar, and stir in; when it is thick as custard remove from the fire, and when cool add whatever flavoring you choose, and the whites of the eggs beaten to a stiff froth.

Dutch Sauce.—Take the juice of 1 lemon, and whites of 2 eggs. Beat together with sufficient sugar to give the proper consistency.

Foaming Sauce.—Use 1 cup sugar, 2 eggs, 1 tablespoon of boiling water. Beat the sugar and yolks together; pour the boiling water over. Beat the whites of eggs to a stiff froth and stir in last.

Foam Sauce No. 2.—Take the yolk of 1 egg and beat it with 1 cup sugar and butter the size of an egg, until light, add boiling water and set it over a kettle until cooked; flavor with lemon juice; beat the white of the egg to a stiff froth and add the last thing.

Fruit Juice Sauce.—Take $\frac{1}{2}$ pint of any kind of fruit juice, like apricot, peach, etc., add 1 teaspoon of flour or corn-starch and $\frac{1}{2}$ cup sugar; mix well, boil 5 minutes, and strain.

Golden Sauce.—Beat 1 heaping tablespoon of butter into 1 cup of powdered sugar until light; stir into this the yolks of 3 eggs and 3 tablespoons of milk or cream, and add the stiffly beaten whites of the eggs. Set the bowl in which the sauce is being made in a kettle of boiling water, and stir constantly until it thickens, but no longer; add lemon or vanilla when the sauce is done.

Jelly Sauce.—Use 2 tablespoons of jelly, 2 heaping tablespoons of sugar, $\frac{1}{2}$ teaspoon of corn-starch and water. Melt the jelly and sugar in $\frac{1}{2}$ pint of boiling water; then dissolve the corn-starch in $\frac{1}{2}$ cup of cold water and stir it in; bring to a boil and it will be done. Any jelly can be used.

Hard Lemon Sauce.—Mix the grated rind of 1 lemon with 2 cups sugar, and beat it to a cream with 1 cup butter; then thoroughly mix with the sauce the strained juice of the lemon.

Hard Vanilla Sauce is made by beating to a cream 1 cup butter and 2 cups sugar, and then mixing in 1 teaspoon vanilla extract. Either of these go well with plain boiled rice.

Lemon Sauce.—Take 1 cup sugar, 1 lemon, 2 cups water, 1 tablespoon corn-starch; boil from 8 to 10 minutes.

Lemon Sauce No. 2.—Cream together 1 cup sugar and $\frac{1}{2}$ cup butter; add the juice and grated rind of 1 lemon, 1 egg well beaten, and 1 teaspoon grated nutmeg; set the dish containing it in a pan of hot water, add $\frac{1}{2}$ cup boiling water, and stir 5 minutes. Keep hot until used.

Lombard Sauce.—Heat 2 cups cream slowly, set in a sauce-pan of boiling water; when scalding hot, remove it from the fire, add 4 teaspoons powdered sugar, and $\frac{1}{2}$ teaspoon grated nutmeg; stir 2 or 3 minutes, add the whites of 2 eggs, beaten stiff, mix thoroughly, add 1 teaspoon vanilla to flavor, and set in a pan of hot water to keep hot till served, stirring occasionally.

Milk Pudding Sauce.—Take 1 egg, $\frac{1}{2}$ cup butter, 1 cup of sugar; mix thoroughly together, and then pour over them 1 cup boiling milk. Flavor with nutmeg or vanilla.

Maple Sugar Sauce.—Shave maple sugar into a bowl of thick, sweet cream. It makes one of the best of sauces for cornmeal pudding.

Molasses Sauce.—Use 1 tablespoon of butter, $\frac{1}{2}$ cup of water, 1 cup of molasses, $\frac{1}{2}$ teaspoon of cinnamon (or nutmeg), $\frac{1}{4}$ teaspoon of salt; juice of 1 lemon. Mix all together, and boil 20 minutes. Good for rice or apple puddings.

Orange Sauce.—Use 1 cup hot water, 1 cup sugar, $\frac{1}{2}$ cup butter, 1 heaping tablespoon of corn-starch wet in the strained juice of 2 acid oranges (the red, or blood oranges are the best); boil the water, sugar and orange peel, until the sugar is dissolved; then add the corn-starch and orange juice, and let boil until it thickens; take out the orange peel and add the butter, with 1 saltspoon of salt; stir well together, and serve.

Pine-Apple Sauce.—Use 4 tablespoons sugar (heaping), 2 tablespoons of butter, white of 1 egg (beaten), pine-apple to flavor. Mix the sugar, butter and beaten egg, and add the flavor. Shape it into a pyramid, and make the sides like a pine-apple, using the point of a teaspoon. Any other flavor can be used, if preferred.

Plain Pudding Sauce.—Beat together thoroughly, 1 tablespoon butter, 4 tablespoons sugar, and 1 tablespoon flour; add the white of 1 egg, well beaten, and $\frac{1}{2}$ cup boiling water, and any flavoring desired. This makes a good sauce for ordinary uses, although most sauce recipes call for more butter. It goes well with any hot pudding.

Plum Pudding Sauce.—Rub 2 spoons of corn-starch smooth with a little milk, and stir it into 1 pint of boiling water; add a large piece of butter, and use currant jelly to flavor it with. It may be well to know that a good foundation for plum pudding sauce is the liquor in which it was boiled, as that is quite rich.

Plum Pudding Sauce No. 2.—Use fresh butter and pulverized or granulated sugar beaten together until the mixture becomes of the consistency of cream.

Sweet Pudding Sauce.—Beat to a cream $\frac{1}{2}$ cup butter and 1 cup sugar; thicken $1\frac{1}{2}$ cups boiling water with a very little corn-starch (just enough to make it creamy); let it boil, draw to the back of the stove, and stir the butter and sugar in quickly. Flavor with vanilla, lemon, nutmeg, or anything preferred.

Vanilla Sauce.—Use the yolk of 1 egg, whites of 2 eggs, $\frac{1}{2}$ cup sugar (powdered), 3 tablespoons sweet milk, 1 teaspoon of vanilla. First beat to a stiff froth

the whites of 3 eggs; beat the sugar in next; then the yolk of egg, and the milk and vanilla last. Serve at once. Most suitable for light puddings.

Vinegar Sauce.—Use 1 tablespoon of flour, $1\frac{1}{2}$ tablespoons of vinegar, 1 cup sugar, 2 cups boiling water, 1 teaspoon of butter, a pinch of salt, nutmeg. Mix the flour in a little water and stir in the vinegar, sugar, salt and nutmeg; add the boiling water, and boil 10 minutes; add the butter last, just as it is about to be taken from the stove.

White Pudding Sauce.—Take 1 cup granulated sugar, 1 tablespoon butter, and a little salt, pour on 1 cup boiling water, and, when it boils, thicken with 1 large tablespoon of flour blended in 3 of milk; boil 1 minute, flavor with lemon, take from the fire, and stir in the whites of 3 eggs beaten to a stiff froth, with 1 tablespoon of powdered sugar added.

DOUGHNUTS AND FRITTERS.

The Fat.—The fat for frying doughnuts and fritters may be any soft fat free from rancidity, which is at hand; pure leaf lard, for this purpose, was once considered indispensable, but soft suet, or the fat trimmed from the outside of fat beef, is excellent, combined with lard; also clarified drippings from roasted meat, either beef or pork. A small proportion of the hard kidney suet of beef may be added, but if hard suet is in excess in frying fat, food cooked therein will have a thick, tallowy crust, which is neither palatable nor digestible. Cotton seed oil, alone, or in combination with a small proportion of beef suet is used by some cooks; others dislike it. Of this, as with some other food preparations, the taste may perhaps be acquired. Mutton fat should never be added to the frying kettle, or used in any way; as stated elsewhere, the strong odor to which many people have a great aversion, is intensified by reheating; besides, it is the hardest of animal fats, and cools too quickly on food cooked in it. If black specks adhere to the doughnuts after they are fried, put a few slices of raw potato in the fat, and the specks will adhere to the potato. If lard or drippings are not perfectly sweet, before putting in any dough put in some slices of raw potato and fry them; the potatoes will absorb the rank flavor. A few slices of raw potato in the kettle while cooking doughnuts will keep the odor from permeating the house.

Potatoes are largely composed of starch and carbon and they purify the fat in much the same way that water is purified by charcoal; being very porous, and possessing great powers of absorption, they take up the gases and odors, thus purifying the fat.

The Kettle.—A kettle should be kept for the purpose of frying doughnuts and fritters, and one rounded at the bottom, broad, and shallow, is the most convenient shape.

Clarifying Fat.—The frying-fat must be clarified from time to time, as more or less flour falls to the bottom of the kettle whenever it is used; the fat can be poured while still warm—not hot—into a pan of water, and the settlings scraped from the cake of fat when it is cold; a more simple way is to set the kettle away with the fat in it to cool, and when next wanted for use set on the fire just long enough to start the cake of fat from the kettle; lift it from the kettle with a carving fork, and with a knife cut the black from the cake of fat, wipe out the kettle with papers and put them in the fire; then return the fat to the kettle and add more if needed. The dirty looking sediment is commonly thrown away, but it need not be altogether wasted; when a considerable quantity has accumulated it may be clarified by the second method described for clarifying fats in our article on frying meats, etc. (which see.)

The Dough.—Be careful in shortening all doughs to be fried in fat, either for doughnuts or fritters, for if too tender, they will absorb the frying fat. If shortening is used, eggs must be added and the dough made more stiff, to counteract the tendency to soak fat; little or no shortening is best for most doughs cooked in fat. The fat must also be hot enough for any dough placed in it, to rise instantly to the surface of the fat; this can be ascertained by trying it with a small bit of dough, before proceeding with a quantity. Remember that a frequent cause of trouble is in not having the fat hot enough, and we have several times alluded to this. Have it so that it gives off a blue smoke, as explained for frying meats (which see).

DOUGHNUTS OR CRULLERS, ETC.

In frying all kinds of doughnuts let them thoroughly brown on one side before turning them; in this way they rise thoroughly, and are much lighter than if frequently turned while frying, but fry both sides well before taking them out. Do not fry so many at once as to cause crowding. When done, take them out, let them drain, and when cool keep them in an earthen crock.

Fried cakes keep moist longer when made with brown sugar than with any other kind.

RAISED DOUGHNUTS.

1 cup butter and lard mixed.
2 cups sugar.

1 cup warm water.
1 cup yeast.

3 eggs, beaten.
Salt and spices.

Rub the butter and lard into a quart of sifted flour, add 1 even tablespoon of salt, and spices if liked; put the water in the flour, then the beaten eggs, then the sugar; now mix all together, and add flour enough to mold into a soft dough; let it rise over night, knead down again in the morning, let it lie on the molding-board until it begins to rise again, then roll out and cut in rings or make into twists, and fry in hot fat. A cup of washed and dried Zante currants are nice in these cakes.

Plain Doughnuts.—Use 1 cup new milk, 1 level teaspoon of salt, 1 heaping teaspoon of baking powder sifted into 2 cups of flour; mix all together, and add a little more flour if needed, but the cakes are better to be made quite soft. Do not mold the dough, but place it on the molding-board, flatten the dough down with the hands until it is about an inch thick, cut into shape and fry in hot fat. Powdered sugar can be dredged over them when served, if liked.

Doughnuts No. 3.—Use 3 eggs, 1 cup sugar, 2 cups new milk, salt, nutmeg, and flour enough to permit the spoon to stand upright in the mixture; add 2 teaspoons baking powder and beat until very light. Drop by the dessertspoonful into hot fat. They will not absorb the fat, and are as digestible as any doughnuts.

Doughnuts No. 4.—Use 1 tablespoon butter, $1\frac{1}{2}$ cups sugar, 2 eggs, 1 cup sour milk (or buttermilk), 1 teaspoon soda; flour enough to roll out. Spice to taste.

Doughnuts No. 5.—Use 1 cup sugar, 2 tablespoons shortening, 1 cup sweet milk, 1 teaspoon soda, 2 teaspoons cream of tartar and flour to roll out.

Coffee Doughnuts.—Use 1 cup sour milk, 1 teaspoon of salt, 1 tablespoon of sugar, 1 teaspoon of soda; make with flour as soft as you can handle it; then make into twists or rings, and fry in hot fat. These are not rich, but are nice in the morning with coffee.

Cream Doughnuts.—Beat 1 cup sour cream, 1 cup sugar and 2 eggs together; add 1 teaspoon soda, a little salt, and flour enough to roll.

FRIED CAKES.

1 cup milk. Flour to roll.
1 large spoon melted butter.

2 cups sugar (scant).
3 teaspoons baking powder.

4 medium-sized eggs.
Cinnamon and salt.

FRIED CAKES NO. 2.

2 cups sour milk.
1 tablespoon shortening.

2 cups sugar.
1 teaspoon of salt.

2 eggs.
Flour to roll.

1 teaspoon soda.

CRULLERS.

1 cup butter.
2 cups sour milk.

2 cups sugar.
2 teaspoons baking powder.

3 eggs.
Spice to taste.

Use flour enough to stiffen; cut out, and fry in hot fat.

JOLLY BOYS.

2 cups Indian meal scalded.
 $\frac{1}{2}$ teaspoon of soda.

$\frac{1}{2}$ cup sugar.
 $\frac{1}{2}$ teaspoon of salt.

1 cup flour.
1 egg.

Drop by tablespoonfuls into hot fat, and fry like doughnuts.

FRITTERS.

These are composed of batters and doughs of various kinds, usually enclosing fruits or sweets of some sort, and are fried in hot fat; they are eaten hot, and some sweet sauce or sugar served with them. They should be quickly made, and

thoroughly beaten. The batter should be smooth and thick enough to cling to whatever is dipped into it without running off, and the fat should be very hot, in fact, it should smoke. Probably more cooks fail on the heat of the fat than on anything else, and yet it should not be too hot. When it gives off a blue smoke, as we described in our directions for frying meats, etc., it is right; or test it by dropping in a teaspoonful of the batter; if the temperature is right, the batter will quickly rise to the surface in a puff ball, spattering and dancing, and will speedily become a light brown. When the fat is right, it will not soak into the dough, but will make it delightfully crisp, light, and puffy. In the introduction to this chapter, we explain about the kinds of fat to use. Take the fritters out with a skimmer, as soon as they are done, dislodge any fat which adheres, pile them in a hot dish, sift sugar over them, and serve at once.

The batter may be simply made, as for griddle cakes, and of about the same consistency. If it is allowed to stand an hour or so before being used, the starch grains will swell by contact with the moisture, and hence it will be lighter. Eggs added to the batter make it crisp and delicate, and ensure a good coating over the fruit, etc., enclosed. Baking powder, or cream of tartar and soda, are sometimes used when the batter is wanted very light; when shortening is used add eggs also, as their albumen quickly coagulates in the hot fat, and forms a crust, or film, which prevents the fat from soaking in. The best batter is made with the yolk of egg, and just before using, the white is beaten to a stiff froth and added also. Always add a little salt. A little more flour can be used, making the batter a little thicker, for fruit which is very juicy.

Fritters are quickly made, and can be served for breakfast, luncheon, tea, or as a dessert for dinner, and they are almost invariably relished. Hot caramel syrup, or maple syrup can be served with them, or the simple white syrup made of granulated sugar and a little water, while many of the pudding sauces are also suitable.

Fritter Batter (Plain).—Use 2 cups of flour and 2 eggs. Beat the eggs and flour together, and add enough sweet milk to make a batter of the consistency of griddle cakes; then beat in a level teaspoon of salt. This batter is simply made, and can be used for any kind of fritters.

Batter No. 2.—Mix together $\frac{1}{2}$ cup water or milk, 1 saltspoon of salt, 1 tablespoon melted butter, and the well-beaten yolks of 2 eggs; then beat in enough flour to make a good batter of it. Many cooks use 1 tablespoon of olive oil instead of the butter, and prefer it. Just before using it beat in the well-beaten whites of the 2 eggs. If it is used for meat, oysters, or clams, 2 teaspoons of vinegar or lemon juice will be an improvement; if for fruit, add instead 1 teaspoon of sugar.

Apple Fritters.—Peel the apples, and take out the core with a core-cutter, cut the apples in thick slices, crosswise—this makes a ring; sprinkle with sugar and let them lie for an hour; then dip each piece in batter, and fry until of a light brown color. Sprinkle again with sugar and send to the table.

Banana Fritters.—Cut the bananas in slices $\frac{1}{2}$ inch thick, sprinkle with powdered cinnamon, dip in batter, and fry in hot fat. Serve with syrup.

Berry Fritters.—Make a batter of 2 eggs well beaten, add a gill of cream and a gill of milk thickened with a tablespoon of corn-starch; season with a little sugar and cinnamon. Put raw strawberries into this batter, and fry them in a pan of hot lard, a spoonful at a time. Dish them in a pyramid, and sift sugar over and between them. *Raspberries, blackberries, currants*, and other small fruits can be made into fritters in this manner, and are delicious.

Bread Fritters.—Cut stale bread into slices $\frac{3}{4}$ inch thick, and then cut it into small squares. Into 2 cups milk put a piece of cinnamon and the rind of a lemon; boil it $\frac{1}{2}$ hour; dip the bits of bread in the milk, lay them on a cloth to drain, then dip them in beaten egg, and fry a delicate brown in smoking hot fat. Sprinkle with powdered sugar, and serve. Or (2) dip thin slices of yeast bread in

the plain fritter batter, and fry a delicate brown. Sprinkle on powdered sugar, and garnish with jelly.

Cake Fritters.—Cut rounds, squares or triangles of any kind of dry cake, dip them in milk with a little lemon juice added, then flour them, and fry in hot fat.

Carrot Fritters.—Take 2 boiled carrots, beat them to a pulp, add 2 eggs, 3 tablespoons of flour, moisten them with milk or cream, add 1 teaspoon sugar, and beat together thoroughly; drop by spoonfuls in smoking hot fat; when done, squeeze a little orange juice over them, and sprinkle on pulverized sugar.

Clam Fritters.—Drain the liquor from the clams, and make a fritter batter with it; chop the hard part of the clams, mix them in the batter, and drop by spoonfuls into smoking hot fat.

Corn Fritters.—Boil the corn, cut it from the cob, mix it in the fritter batter, and drop by spoonfuls in smoking hot fat.

Cornmeal Fritters.—To the well-beaten yolks of 4 eggs, add 3 cups milk, 2 cups cornmeal, 1 tablespoon sugar, 1 tablespoon melted butter, 1 teaspoon salt; mix all thoroughly, and add the well-beaten whites of the 4 eggs, and $\frac{1}{2}$ cup flour in which $\frac{1}{2}$ teaspoon baking powder has been sifted, drop by spoonfuls into smoking hot fat; when done, drain on brown paper, to absorb the fat. Eat with a sauce made of butter and sugar, seasoned with cinnamon.

Cream Fritters.—Mix 3 cups flour with 2 cups milk; stir in 6 well-beaten eggs, then 2 teaspoons salt and 2 cups cream; stir the whole just enough to intermix the cream, and fry. The addition of a few tender apples, chopped fine, will improve them.

Fruit Fritters.—Almost every kind of fruit will make fritters. If the fruit is cut up, sprinkled with sugar, and allowed to stand 2 or 3 hours before being used, the flavor is improved; a little grated lemon peel can be added also, if desired. Then drain the fruit, dip or mix it in batter, and fry in hot fat. *Apricots, peaches, pears, pine-apples*, etc., make nice fritters in this way. *Canned fruit* can also be used, and makes nice fritters.

Jelly or Jam Fritters.—Make a batter of 2 eggs, 1 cup of milk, and flour enough to thicken to the consistency of griddle cakes; beat in a level teaspoon of salt, and drop in spoonfuls in hot lard; fry brown. When well drained, place on each one a bit of jam or firm jelly. (Lemon jelly made with gelatine is nice for these fritters.)

Lemon Fritters.—The lemons must be sliced as thin as paper, the seeds carefully removed, and then cover them with butter, and fry in hot fat.

Orange fritters can be made the same way.

Meat Fritters.—Take cold meat of any kind, cut it into small pieces, season it with pepper and salt, cover with fritter batter, and fry in smoking hot fat; drain on brown paper and serve. A few drops of lemon juice or vinegar on the meat and a little nutmeg grated on will be an improvement, or the lemon juice or vinegar can be added to the fritter batter. (See our batter No. 2.) *Tripe* makes good fritters.

Oyster Fritters.—Drain the liquor from the oysters, and to 1 cup of this liquor add 1 cup milk, 3 beaten eggs, a little salt, and flour enough to make a thin batter; chop the oysters, add them to the batter, and drop by the spoonful into smoking hot fat. Serve immediately when done. Or (2) boil the oysters until the liquor flows; make a batter with the liquor, dip in each oyster whole, and fry in smoking hot fat. A little lemon juice or vinegar added either to the oysters or the batter will be an improvement.

Pork Fritters.—Dip thin slices of fat pork, or breakfast bacon, in batter, and fry in hot fat.

Potato Fritters.—Use 2 cups mashed potatoes, 1 egg, $\frac{1}{2}$ teaspoon salt, and 3 tablespoons flour, into which $\frac{1}{2}$ teaspoon baking powder is sifted; make in rolls, roll in flour, and fry in hot fat. These are a nice relish for breakfast.

Raw Potato Fritters.—Grate 4 large raw potatoes, add a little salt and cayenne pepper, and make a rather thick batter by adding 2 beaten eggs; drop in hot fat in spoonfuls, and fry a light brown.

Rice Fritters.—To 1 cup of boiled or steamed rice allow 2 eggs, and a tablespoon of flour; add a saltspoon of salt, and 1 of ground cinnamon; mix thoroughly with the hand, then drop in spoonfuls in hot lard; fry brown.

Salsify Fritters.—Boil the salsify, mash it, pick out all tough fibres, and for each 2 cups of mashed salsify work in 1 tablespoon of butter, and then $\frac{1}{2}$ cup of milk and 3 well-beaten eggs; thicken with a little flour, make into round cakes, dredge with flour, and fry in smoking hot fat; or the batter may be fried like griddle cakes.

Vegetable Fritters.—Boil the vegetables until tender, and either cut in slices, dip them in the fritter batter and fry, or chop fine, mix the pieces into fritter batter, and drop it by spoonfuls into smoking hot fat and fry a delicate brown. Celery, parsnips, and other vegetables can be used.

Various Fritters.—An ingenious cook can easily devise varieties by using different flavors. Use vinegar or lemon juice for meat, oyster or clam fritters, and cinnamon, nutmeg, orange juice, jellies, etc., in various combinations, and also vary the sauces used. As almost any meat, fruit or vegetables can be used for fritters, the varieties that can be produced are almost endless.

Cannelons.—These are made of puff paste rolled very thin, and cut in pieces about 2 inches wide and 6 inches long; place upon each piece a spoonful of jam, wet the edges with the white of egg, and fold the paste over twice to prevent the escape of the jam while frying; slightly press the edges of the cannelons, and fry in boiling lard until a nice brown. Lay them on blotting paper to absorb superfluous fat, and sprinkle with sugar before serving. Cannelons can be made with any kind of fresh fruit, and are delicious.

CAKE.

The 4 corner-stones of cake making are flour, sugar, butter and eggs. By combining these in varying proportions and using a few minor accessories, an endless variety of attractive and delicious cakes are obtained.

In measuring for cake the cups, if more than 1 is used, must be of exactly the same size, for the cook must remember that success is more apt to follow accuracy of measurement. Make the fire the first thing, and while the oven is heating, measure and place on the cooking table *all* the materials for the cake, and have at hand all the implements (forks, spoons, cup, beaters,) which will be required in making it.

Materials for Cake.—These should always be of the best quality, as cake is a luxury, and if served at all should be made of the best ingredients. Have everything perfectly dry, as dampness in the materials is almost certain to produce heaviness in the cake. It is best to have each ingredient properly prepared before beginning to mix the cake, and in cold weather warm them to a uniform temperature and they will mix better. While all the materials should be good, however, many cooks are needlessly extravagant in their use of butter and eggs, and we commend to our readers the economical recipes which we have gathered together in this, as in other departments of the book.

Butter used in cake making should be free from rancidity. In cold weather let it stand near the stove to soften, but most cake makers agree that it should not melt. It must be worked and beaten with the sugar until it is thoroughly creamed. Many cooks use moderately salted butter without washing, as the small amount of salt which it contains adds to the flavor of the cake, but if it is excessively salted the washing process is indispensable. To wash butter it must be thoroughly worked with the hands in a deep pan or pail of water until it is soft and pasty, changing the water once or twice if needed. In cold weather the water may be slightly warmed, but in summer it should be cold.

Sugar should always be dry and well powdered. For delicate cakes, pulverized or the finest grade of granulated sugar should be used. Some kinds of fruit cake have a fine flavor imparted by using a good quality of unrefined brown sugar, and brown sugar is suitable for most dark cakes. Cake is made heavy by using very coarse granulated sugar. Lumpy sugar should always be crushed and sifted.

Molasses for cooking should be the rich, dark New Orleans or West India molasses. Light colored syrups are sometimes made of glucose and are inferior, being less sweet than that drained from crude sugar, these grades being the viscid, brown liquid which drains from sugar during its formation. In baking cakes remember that those containing molasses burn quicker than others.

Flour.—*Pastry flour* (that is "old process" or St. Louis flour) is much the best for all kinds of cake. It contains more starch and less gluten than the new process flour. A trifle less flour (about $\frac{1}{8}$ less) must be used if it is new process. Be sure the flour is dry; sift it before using, and if it is cold, warm it slightly. Measure it *after* being sifted.

Eggs will beat more quickly in cold weather if they are placed for a short time in warm water before breaking them. In summer put them in cold water for a short time. Break each egg separately into a cup to make sure that it is not stale; not only *look* to see if it is good but test it also by smelling. An egg that is the least tainted will spoil the cake or anything else in which it is used. The quickest way to separate the yolk and the white is to carefully break them into a plate and then lift out the yolk with the fingers, allowing the white to fall between them. If even the smallest amount of yolk gets mixed into the whites they will not froth. Beat eggs in an earthen dish. The whites and yolks are best beaten separately as it takes longer to beat the whites. When beaten separately, if the cook has no assistant, the yolks should be beaten first and until they are a light lemon color, and strain them if the cake is fine; then beat the whites until they are too stiff to fall out of an inverted dish. If the whites become liquid

again they cannot afterwards be made light, so do not stop beating till they are light and stiff. The eggs should be put in a cool place till wanted to use. When only the whites are used, the yolks, if unbroken and kept covered, will keep 2 or 3 days, but it is better to use them at once, working them into custards, etc. The whites of eggs will beat quicker if a pinch of salt is added, and they also beat more easily in a cool place or in a draught. If both yolks and whites are strained through a sieve before beating them they will beat smoother and easier.

The object in beating eggs is to force in air. The more and quicker they are beaten the better, up to the point where the albumen forms a thin film around all the air bubbles it will hold—millions of them. More beating after that only serves to break the film and let the air escape, and then the eggs will fall. If allowed to stand after being beaten, their own weight will break the thin films, the air will escape, and they will fall. Because of the oil contained in yolks they will, if added to beaten whites, cause the films to break, and so let out the air. This is the principle involved.

Milk when called for in our recipes, always means sweet milk, unless otherwise specified. Some cooks use water instead of milk in even the best cakes, and water can be substituted without detriment, so that if you wish to make a cake calling for milk, and you are out of it, you can still make the cake and use water instead.

Spices for cake should be of the best quality. Cinnamon, cloves, allspice, and pepper are much nicer if bought in bulk, and freshly ground at home, when needed.

Fruit is best prepared the day before: It should be dry when used. Leave out a little flour for the purpose and roll the fruit in it just before putting it in the cake. With raised cake spread fruit lightly on top, pressing it in a little, but do not beat it in or it will sink to the bottom.

Almonds should be blanched by being put into boiling water; leave a few minutes and then rub off the skin; then throw into cold water to preserve their color. If they are pounded, a little white of egg or water should be added every 2 or 3 minutes to prevent their oiling. Or cut them up and roll with a rolling-pin on a table or marble slab, spreading a little sugar on first. If not pounded or rolled they should be cut into thin slices or divided lengthwise. To spread almonds, cut them with a sharp knife into fine strips lengthwise.

Citron should be sliced very thin, and the pieces should not be too large.

A coconut should have the milk drawn out through a hole cut in the end; crack it and take the meat out (having previously loosened it by pounding it all over) and dry for a few hours in a cool open oven; then grate and use. If any is left it can be kept for several weeks, if necessary, by sprinkling it with sugar and keeping it in a cool, dry airy place.

Currants should be washed in warm water, changing it 2 or 3 times, and rubbing them well with the hand. Then drain them, spread out on a cloth, and pick out all bad ones, sticks, grit, etc., and dry them in the sun; an oven unless very slow will harden them. It is well to prepare several pounds at a time, and keep them in glass jars. English currants are apt to be "gritty;" they may be made to "plump," or fill out, by pouring boiling water over them, after which dry them. Currants are neither so wholesome nor nutritious as raisins.

Dates are prepared by separating them from each other; then put them into lukewarm water, shake them about for 2 or 3 minutes, and drain. Now take out the stones; this can be done with the fingers as a rule, but if they are very hard use a sharp knife. Then rinse them very carefully again, and drain them very thoroughly.

Raisins can be stoned more easily if boiling water is poured over them and left on 5 or 6 minutes, as that loosens the seeds. Pick out stems and defective raisins. For light fruit cake they may be chopped, but not too fine. Have them perfectly dry when used, and dredge flour over them.

Baking powder, Cream of Tartar and Soda.—Cake should not be made overlight with baking powder. A less quantity is needed, in proportion to the flour, than for biscuits, which are made light and comparatively dry, as they are to be eaten soon after being made, but cake is made to keep for some time—a week or longer. It should of course be light, but *fine-grained and moist*. The rule for biscuits is about 3 rounded teaspoons of baking powder to a quart of flour; for that amount of flour in cake, made with eggs properly beaten, 1 teaspoon of baking powder is sufficient. The baking powder or cream of tartar should be well sifted into the flour before mixing that into either cake, biscuits or bread. Dissolve the soda in a little milk or water.

Cream of tartar and soda can be used instead of baking powder in any recipe, or *vice versa*, but as all baking powder contains some starch or flour to keep it dry (see our recipe for making it) it is not quite as strong as the pure cream of tartar and soda, so that about $\frac{1}{2}$ more baking powder is required than of the cream of tartar and soda combined. The usual proportion for 1 quart of flour for bread or biscuit is 1 teaspoon soda and 2 teaspoons cream of tartar; or 3 rounded teaspoons baking powder; and a convenient rule is 1 level teaspoon of baking powder to 1 cup flour, but cake, when lightened with eggs, requires less than $\frac{1}{2}$ of this.

The 2 alkalies used in cooking are soda and potash or their derivatives. Potash is found in all fertile soils, and is essential to plants, and all land plants when burned yield potash. When calcined and purified it yields *pearlash*. *Saleratus* is a kind of pearlash derived by subjecting it to the action of carbonic acid gas. The potash compounds are now little used.

Soda is obtained from sea-salt or marine plants. It is called *sal-soda* when unpurified. It is combined with 1 part of carbonic acid to form the carbonate, and 2 parts of carbonic acid to form the bicarbonate of soda, or the baking soda ordinarily used. Soda should *always* be thoroughly pulverized before it is measured so that there are no lumps in it. Strong alkalies are powerful poisons and must be counteracted or rendered inert before entering the system. This is done by the acids used. The too free use of soda or saleratus in cooking is injurious to the health, and is recognized and commented on by good medical authorities. The alkali particularly affects the coatings of the stomach and bowels and causes indigestion and bowel complaint, sometimes ending in acute inflammation. Children are often injured by it. Bicarbonate of soda contains twice as much carbonic acid as common washing soda, but if it is dissolved in hot water, or heated in any way, this extra gas is driven off, and it is at once reduced to the level of common washing soda. For this reason soda should never be dissolved in hot water; tepid water may be used, but cold water or milk is best. It will dissolve as thoroughly in cold as in hot water, although not as quickly; or it can be thoroughly mixed and sifted into part of the flour, and will then be incorporated so as to leave no yellow spots. If used in molasses, dissolve it in as little water as possible, beat it into the molasses till it foams, and then add it to the other materials at once.

Cream of Tartar is an acid obtained from crude tartar, or argol, a substance deposited on the sides of the casks during the fermentation of wine. It is purified by using charcoal and clay, and crystallized. When cream of tartar unites with the bicarbonate of soda, carbonic acid gas is liberated, and the minute bubbles permeate the mass of dough and make it rise, while the residue forms a salt known as Rochelle salt. This is a well-known cathartic, but is not harmful in the small quantities thus formed. The acid and the alkali should, however, be so proportioned as to neutralize each other. They then form what is known as a neutral salt. If the acid is in excess the salt will be acid, and if the alkali is in excess it will be alkaline. Experiment shows that 1 level teaspoon of soda is neutralized by 2 full teaspoons of cream of tartar—that is, by a little more than 2 parts of cream of tartar to 1 part of soda; and these are the proportions in which they should be used.

Muriatic acid is sometimes used instead of cream of tartar, and when acted on by soda it leaves a residue of common salt, which is unobjectionable. It acts so quickly, however, that it is not adapted to domestic use, as much of the gas will escape before it performs any work, but it is sometimes used in bakeries.

When *sour milk* is used, the lactic acid it contains acts on the soda the same as the acid cream of tartar, and so liberates gas. The proportion to use is 1 teaspoon of soda to 1 pint of sour milk, or $\frac{1}{2}$ teaspoon to a cup, but it should be remembered that very sour milk contains more acid than that which is just turning, so that some judgment is needed in gauging the proportions. In recipes where molasses is used, milk which tastes or smells sour, but is not thick, can be used as sweet milk.

Molasses furnishes another acid which answers the same purpose as that of the sour milk and cream of tartar, acting on the alkaline soda and liberating carbonic acid gas.

How to Mix Cake.—Probably, as many cakes are wasted through improper mixing, as by any other cause, unless it is insufficient beating. In mixing cakes in which butter is used proceed in the following order:

1. Cream the butter. If it is very cold, warm without melting it. (For the method of creaming butter, see "Puddings.")
2. Add the sugar and beat it thoroughly. If a very large amount is used, part may be beaten into the eggs.
3. Add the seasoning—spices, lemon-juice, flavoring extracts, etc., as given in each recipe, and incorporate them well with the butter and sugar.
4. Add the beaten yolks of egg, and beat all well together.
5. Add the milk.
6. Add the flour, which should be already thoroughly mixed with the baking powder. Stir it in, a little at a time, or add a little flour and milk alternately, stirring continually, and now *beat long and vigorously* to fill it with air and make the cake smooth and fine-grained.
7. Add the beaten whites of egg.
8. Add the fruit, if used, which should be already dusted with flour. Make fruit cakes a little stiffer with flour than those without fruit.

Beat continuously, from beginning to end of the process. Place the dough in the prepared cake-tins and send to the oven as soon as possible, when finished so

that the air which has been beaten in (and which, by expanding, makes it light) may not escape.

Always work cake together with a spoon, if possible, but when a large quantity of fruit cake is made, it is necessary to use the hand in order to mix it properly.

For sponge cakes (which are those made without butter or shortening) proceed as follows: (1) Beat the yolks. (2) Gradually add the sugar and beat well. (3) Add the flavoring and water, if used. (4) Add the well-beaten whites of eggs. (5) Sift in the flour and carefully fold it in. After adding the flour, sponge cakes, unlike other cakes, should not be beaten. The lightness depends on the quantity of air beaten into the egg. Less beating is required when soda and cream of tartar are used, but the cake is not as good.

Always use an earthen bowl or pan, for mixing cake. Butter and sugar, if worked to a cream in tin, is apt to be discolored. Beat the eggs with a silver or wooden spoon. As a rule (in cold weather, always), pour hot water into the mixing-bowl to warm it; then wipe dry. This facilitates the blending of the butter and sugar, and is the first operation. If a large quantity of cake is to be made, the cook should have an assistant; for a small quantity, and if the cook is alone, everything in the way of ingredients or utensils should be ready at hand on the cooking table, so that there will be no delay. Much depends on mixing the cake rapidly, and immediately placing it in the oven. Those who will bear the above rules in mind can handle any cake, so far as the mixing is concerned.

Beating and Stirring.—There is a good deal of difference between beating and stirring. Stirring merely mixes the different ingredients together, while beating carries in air and thoroughly distributes it through the mass, and in baking, this air expands and makes the cake light. Unless the air is well beaten into the dough, no after attention will make it light and wholesome. After putting in the beaten white of egg, too much subsequent beating will let the air escape, and so be a detriment. It is *beating*, not *stirring*, which is needed throughout the process.

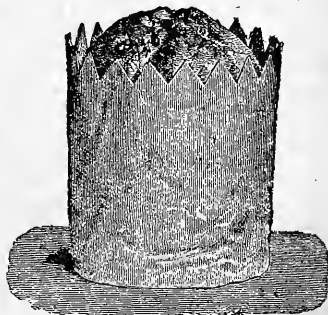
Cake Baked in Paper.—If there is danger that cake will rise above the top of a pan and run out, or if you have a large cake and the pan is too small to hold it, the cake can be baked in paper as shown in the accompanying engraving. Make the paper case out of thick glazed paper, coat it thickly with butter, put in the cake, and the paper will not burn in a moderate oven.

The Oven and Baking.—While cake is being made there should be no other cooking done on the stove, for as success depends very much on the baking, the cake maker should constantly watch and have absolute control of the fire. Make the fire the first thing, and while the oven is heating mix and prepare the cakes.

In the absence of a thermometer, a few rules are here given for testing the heat of the oven, but as every stove or range bakes a little differently from others, the cook must learn by practice the proper heat required for different kinds of cake. (1) Put white writing paper in the oven, and if it turns to a dark yellow color—not brown—in 5 minutes, the oven is of the right temperature for most cakes. (2) Place a little flour on a tin plate, and set it in the oven; if it turns a dark yellow in 5 minutes, the heat is right. (3) Hold the hand in the oven and count 12. If you cannot do this the oven is too hot.

Cake Pans.—Layer cakes are baked in thin cakes in tins made for the purpose, sometimes called jelly-cake tins. Loaf cakes are baked in deep bread tins, or hoops and large pans made for the purpose. Flat loaves are usually baked in the old-fashioned brick shaped tins and are 1 or 2 inches in thickness.

The cake pans (with a few exceptions found among the recipes) should be well buttered, and clean, thick manilla or heavy writing paper fitted to the bottoms of the pans, and for rich fruit or wedding cakes, which require baking for hours, 3 or 4 thicknesses will be a safe-guard against burning the bottoms of the cakes. It is not necessary to line the sides and ends of the pans if they are



CAKE BAKED IN PAPER.

well buttered; a knife slipped around the cake will easily detach it. In baking layer cakes the pans are not usually papered to prevent them from sticking, but when paper is not used butter the pans well, throw in a handful of flour and shake it well over the inside of the pan; then drop it, bottom side upward, to remove all the flour which does not adhere to the butter. If layer cakes do not easily remove from the pans, leave them for a few moments bottom side upwards, turned on a cloth, and the steam from the cakes will soon cause them to drop. If buttered paper is used put it in buttered side up, and let it overlap the sides about 1 inch to assist in lifting out the cake.

If a cake pan with a tube in the center is used the cake will bake more evenly. Many substitutes are devised by those who are without such pans, such as a lamp-chimney, glass bottle or paper tube. They should be greased, and placed in the center of the pan before the batter is poured in. Something weighted down is best, like a tumbler or bottle filled with sand.

Small cakes require a quick oven when they are first put in, to make them rise, but the heat should not be increased after they have begun to bake. Large cakes should be put into a more moderate oven in order that they may be well done in the middle before they are over-done on the outside. Cake will not be light if the oven is too cold at first, or if it is too hot and bakes the cake too quickly. The oven is too hot if it browns the cake before it rises. Cake should first rise at the edge, then the middle should come up, crack a little, then settle back and the cracks close. Too much flour has been used if it rises in the center the most, cracks, and remains up. Most loaf cakes require an oven about the same as bread, but layer cakes are best baked quickly and need a brisk fire. For all cake the temperature should be *even*. For this reason avoid stirring the fire or crowding on heat during the process of baking, and if the fire is replenished add little fuel at a time to keep the heat uniform.

If the oven bakes too rapidly on the bottom, an inverted dripping-pan may be placed in it, or if required the bottom of the oven can be covered with hard-baked bricks. If it bakes too rapidly at the top, placing a thin hard-wood board, or a thick piece of paste-board on the top grate, over the cakes, is much better than covering the cakes with paper, which is likely to interfere with the crust as the cake rises. A dish of hot water in the hottest corner of the oven prevents the cake from scorching. Open the oven as little as possible, and do not let a draft of cold air strike the cakes or they will fall, and do not move them till they "set" or brown a little on top.

Thin cakes (flat loaves) may be turned in the oven if necessary, after baking 10 minutes; thick loaves of rich cake should not be moved in less than 20 or 30 minutes, and then the turning should be very gently done or they may be heavy in the center. The old "test" for cake was to insert a piece of clean broom-straw or a fine knitting-needle free from rust, and if the cake was done it would come out free from dough; another test is to hold the cake to the ear and listen closely; if done it will be *silent*; if there is the least noise return it at once to the oven. Another sign is its settling down a little and shrinking from the pan.

Do not take cakes out of the oven too soon. Let delicate cakes cool a little in the pans as they are apt to fall if taken out of them hot, but do not let cakes stay in the pans till moist. Let the air circulate around cakes freely to cool them, and have them thoroughly cold before putting them away. Keep them in a tin box or stone jar tightly closed. Any cake made with yeast is best eaten quite fresh. Cakes which are to be long kept, like wedding, black and fruit cakes, can be wrapped in waxed paper to advantage. Any cake can have powdered sugar dusted on it while warm; if it melts, more can be added after it cools.

Use a warm knife if you cut cake while it is warm.

Gingerbread.—Mix soft gingerbreads as soft as they can be handled, and keep the molding-board well floured to prevent the dough from sticking. Use New Orleans molasses as we explained for other cake. Watch the oven closely, as molasses cakes burn more easily than others. If before rolling out the dough it gets too stiff, set it before the fire. Lemon or orange flavor can be added when desired, and many think it an improvement, and the same with raisins, fruit, etc. Ginger can be replaced by other spices like cinnamon and nutmeg by those who prefer their flavor to ginger. Yolks of eggs improve gingerbread even when not prescribed in the recipe; and yolks left from other cooking can be worked into gingerbread to advantage; 2 yolks equal 1 egg, and can be so used for this purpose.

EXTRACTS AND FLAVORINGS.

These are often adulterated. Many of them can be easily and successfully made at home, and much cheaper than to buy them, while their purity will then be assured. In making extracts use deodorized alcohol always. If the oils used are not pure and fresh they will spoil the extract by giving it a turpentine taste. If a little extract is dropped on anything after it is baked; less will be needed, because heat partially destroys the flavor. It is therefore better not to add extracts to anything while hot.

Essence of Allspice.—Add to a wine-glass of strong spirits, 1 drachm of the oil of allspice. This is used, 2 or 3 drops at a time, for puddings, soups, etc.

Almond.—Crush 1 cup of the kernels of peach stone, and soak them in 2 cups alcohol. In using, allow 1 teaspoon of the extract for 1 quart of cake dough or custard. The flavor is very much like almonds.

Bedford Flavoring.—Put into a bottle 3 drops of peppermint, the same of oil of rose, and $\frac{1}{2}$ cup deodorized alcohol; shake well, and keep corked.

Essence of Celery.—Soak for 12 or 14 days $\frac{1}{2}$ oz. of celery seeds in $\frac{1}{4}$ pint of brandy. A few drops will flavor a pint of soup equal to a head of celery.

Cherry and Plum.—The kernels of cherry and plum stones, steeped in brandy, make a nice flavoring liquid for tarts, etc.

Citronelle.—Take the grated rind of 1 orange and 1 lemon peel, rub them to a pulp, and add $\frac{1}{4}$ of a nutmeg grated; add 1 cup water and 6 whole cloves, and gently boil 2 or 3 minutes; then strain, and add 1 cup sugar, and boil to a thin syrup; keep it in a bottle.

Coffee.—Infuse $\frac{1}{4}$ lb. of the best ground and roasted coffee, in 1 pint alcohol.

Curacao.—This is nothing but a tincture of the Curacao orange peel, sweetened and flavored with essential oils. Orange juice can be used in its place for flavorings, or orange essence, tintured with cinnamon, mace or cloves.

Laurel Flavoring.—Take an earthen bowl, and break into it 7 or 8 bay leaves, and add 4 cloves and $\frac{1}{8}$ of a nutmeg grated; then add $\frac{1}{2}$ cup of water and steep for a few minutes on the stove in a basin of hot water, and covered with a saucer; now strain, add 2 tablespoons of sugar, and when cold add $\frac{1}{2}$ cup deodorized alcohol. Keep bottled for use.

Lemon.—Put lemon peel cut into small pieces into a bottle, add alcohol enough to cover it, cork, and set it in a warm place 5 or 6 days, until the alcohol extracts the essential oil from the rind. It can be strengthened by adding oil of lemon, (about $\frac{1}{2}$ oz. to an 8 oz. bottle) or weakened by adding more alcohol. It is easily made, cheap and good.

Orange extract is made in the same way as the lemon.

Maraschino.—This when genuine is made from the kernel of the Marasca cherry, which is grown only in Dalmatia. It is often made from the oil of bitter almonds, blended with oils of cinnamon, rosewater, etc. A similar flavor can be made as follows: Infuse $\frac{1}{2}$ lb. of kernels of cherries (bruised), in 1 quart of alcohol for 6 days; add 1 drachm of oil of maraschino, and 1 lb. of white sugar, made into a syrup by boiling it in $\frac{3}{4}$ quart of water down to a pint; strain through a fine sieve, and bottle for use. Make $\frac{1}{2}$ or $\frac{1}{4}$ the quantity if desired.

Noyau.—This is made from white brandy and bruised bitter almonds. It contains a large proportion of prussic acid derived from the bitter almonds. The best comes from Martinique, but it is expensive and often imitated. Infuse some fresh young peach leaves in whisky for a couple of days; then strain the infusion and mix with clarified syrup when cold. With age it will nearly equal the genuine. Another recipe for making it is to blanch and pound 2 oz. bitter and 1 oz. sweet almonds, and also add and pound 1 lb. white sugar; boil 1 cup new milk, and when cold mix that in, together with the rinds of 3 lemons, 1 quart of whisky, and 1 tablespoon of clarified honey; let stand 10 days, shaking every day; then filter through filtering paper and put in small bottles for use, sealing the corks.

Ratafias.—This is the name given to spirituous liquors flavored with the kernels of various fruits, such as peaches, cherries, apricots, etc., used as flavoring for sweet dishes. Although delicious when used sparingly, they are unpleasant or even poisonous if used to excess. Peach or apricot leaves infused in alcohol can be used instead of ratafia for flavoring puddings. The *ratafia cakes* are flavored with almonds.

Cherry Ratafia.—Take 1 lb. Morella cherries with the kernels bruised, 1 pint proof spirits, $\frac{1}{4}$ lb. sugar; let it soak 2 weeks, and strain through flannel.

Currant Ratafia.—Take $\frac{1}{2}$ cup black currant juice, 2 grains cinnamon, 2 grains cloves, 2 grains peach kernels, 1 pint brandy, 6 oz. white sugar; let stand 2 weeks, and strain through flannel.

Rose Extract.—Let rose leaves soak in alcohol till the essential oil is extracted (about a week); then strain, and add about $\frac{1}{2}$ drachm of otto of roses to 1 pint of the extract.

Tea Flavoring.—Take about 4 teaspoons of the best black tea, crush it and put it into a bowl (it is a good plan to mix 2 or 3 different kinds); pour on about $\frac{3}{4}$ cup of freshly boiled water, and boiling hot; cover it with a saucer, and let it steep 10 or 12 minutes; then strain through cloth and use.

Vanilla.—Cut up 5 or 6 vanilla beans, pods and all, put them in a pint bottle, fill with alcohol, and in a few days the alcohol will extract the essential oil. Equal parts of vanilla and tonka beans can be used, and a very good flavoring extract produced. The tonka beans should be soaked in warm water till the skin can be rubbed off, and then both should be cut in small pieces. (For information about vanilla beans see "Marketing.")

Vanilla sugar is prepared by cutting up the pods, putting them in a mortar with 10 or 12 times as much sugar, and pounding fine; then pass it through a fine sieve, pound again if necessary, and keep in a bottle tightly corked. Or the beans can be cut up, put in a jar, covered with the sugar, and covered tightly. Use the sugar as needed, adding more as long as the beans flavor it.

Syrup of vanilla is simple syrup flavored with essence of vanilla.

Rose water can be prepared by putting a large pinch of carbonate of magnesia, and 4 drops of kissaulik otto of rose into 2 pints of pure water; then filter through fine muslin or filter paper. If the otto is good it will make a fine rose water, and will keep indefinitely.

Orange flower water can be prepared the same way, using 4 drops of oil of neroli Bigarade, instead of the otto of rose.

To Grate Lemon Peel.—Lemon peel gives a different flavor from any extract. There is a right and wrong way to grate it. The flavor comes from an essential oil found only in the yellow rind at the surface. The white part underneath is bitter, contains no lemon flavor, will curdle milk or cream, and is objectionable. Therefore grate a lemon carefully, aiming to remove all the yellow surface, *but no more*. Begin at the end, turn the lemon round as it is grated, and work evenly, and it can be easily and smoothly done. This gives the *zest* as it is called.

Orange peel can be grated the same way. Either can be used for sherbets, cakes, puddings, etc. They can be kept on hand for use by mixing them with powdered sugar, (use 4 parts sugar to 1 part grated peel) and keep in tightly corked bottles.

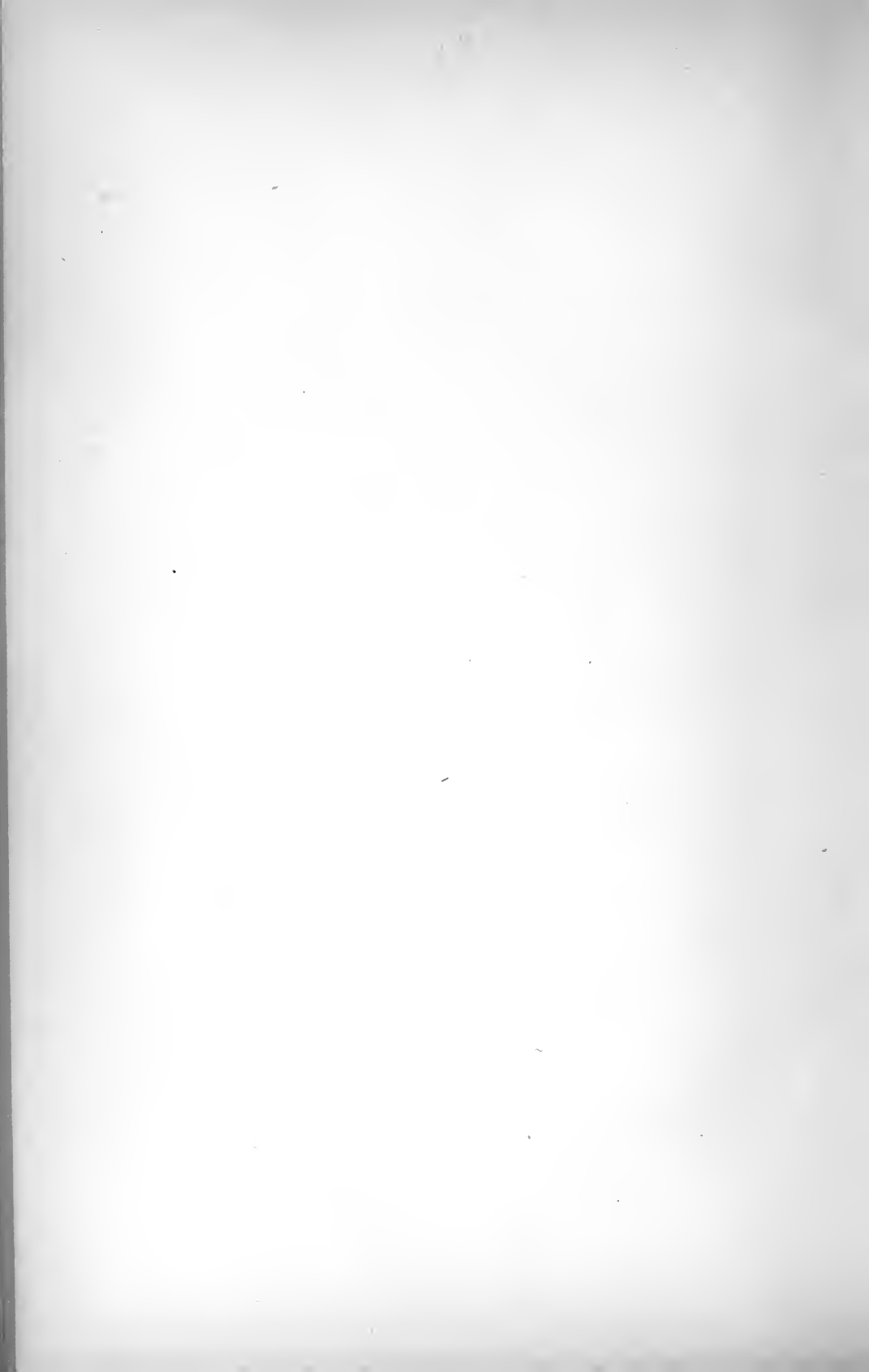
COOKING IN HIGH ALTITUDES.

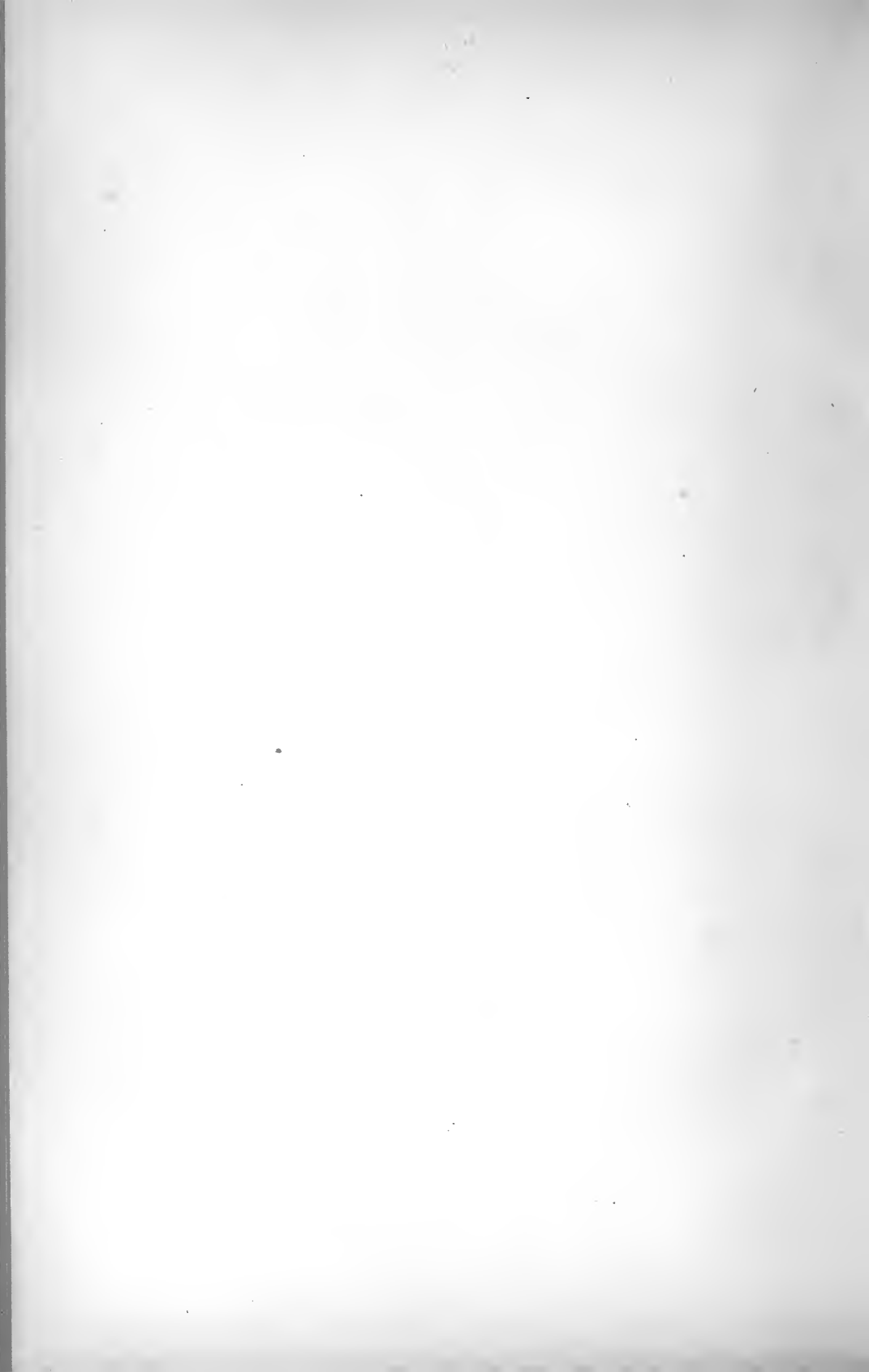
In all high altitudes the rule is to use less butter and sugar, and more flour and eggs. If too much butter is used in such regions the cake will fall, so that very rich cakes cannot be made there. The greater the elevation the more difficulty is experienced. Cakes having no butter, like sponge cake, are easily made in high altitudes. (See also our "Denver Cake.") The *filling* for layer cakes can be made quite rich in such regions, if desired.

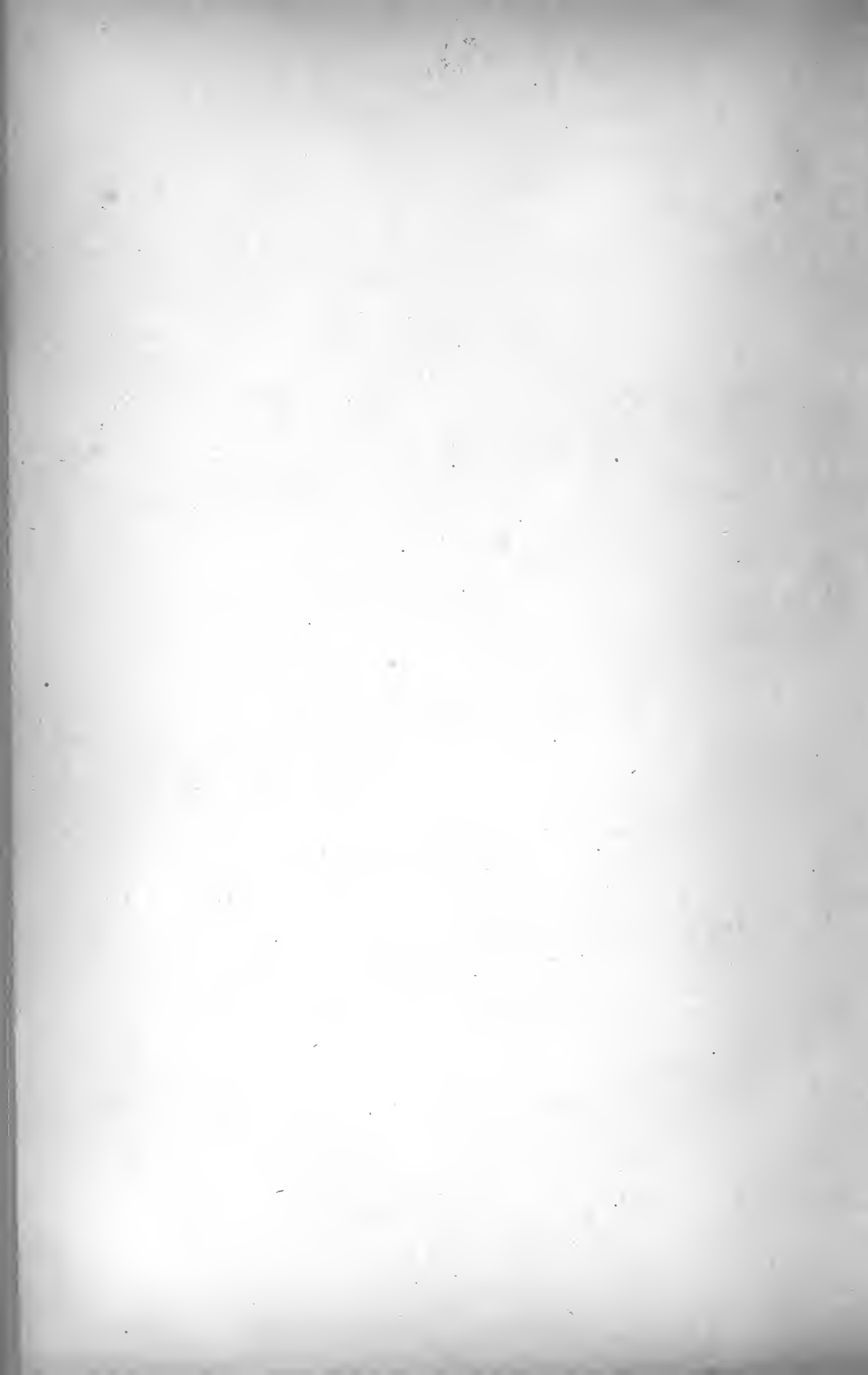
The reason for the foregoing rule appears to be this: The object in beating eggs is to fill them with air, which the tenacious albumen of the egg holds, and carries into the cake, but in high altitudes the air thus incorporated is much *lighter* than at sea level, and the cake will fall unless it is "held up," so to speak, by a stiff batter; hence the rule is to "double the flour, or divide the egg, and use less butter." It is found in these regions that powdered sugar works better than granulated. This rare atmosphere is very dry, and quickly dries cake and bread. These should be kept in a close box, in which vessels of water are placed to keep the air moist. Owing to this dryness of the air, however, meats will keep much longer than in damper climates. The effect of light air on boiling water we spoke of in explaining about boiling meat. It is difficult to cook anything by boiling at all, above what is known as the "timber line." Eggs must be boiled 10 minutes to even be "soft" on Pike's Peak.

LAYER CAKES.

Let layer cakes cool on some flat surface, like an inverted jelly-tin, rather than on an uneven surface like a plate. An inverted jelly-tin also makes a good base on which to build up a jelly cake, and it should be left there till cold. Those with







a little experience can vary the fillings for jelly cakes and make many attractive combinations, but the novice will best adhere to her recipes closely.

FILLINGS.

Apple Filling.—Cook 2 large apples until soft; then add 1 cup sugar, the well-beaten yolk of 1 egg, and the juice and grated rind of 1 lemon; cook all about 5 minutes, and spread between the layers while warm.

Banana Filling.—Mash 6 bananas, add the juice of 1 lemon, and 3 tablespoons of sugar—more if liked.

Caramel Filling.—Take $\frac{1}{2}$ cup sweet milk, $1\frac{1}{2}$ cups light brown sugar, butter the size of an egg. Stir frequently and cook until it strings. When cool, add vanilla or other flavoring.

Chocolate Filling.—Take 1 teaspoon of butter, $1\frac{1}{2}$ cups of powdered or confectioner's sugar, put in a pail and set pail in a kettle of boiling water; put a few drops of water on the sugar so it will melt. Beat whites of 2 eggs to a stiff froth and add to the boiling sugar, and stir until thoroughly mixed. Add about 3 tablespoons of grated sweet chocolate, and vanilla to taste. When nearly cool, spread between layers, and on the top and sides.

Cream Filling.—One pint of sweet milk; 1 small cup of sugar; put it over the fire, in a double boiler, or pail set in a kettle of boiling water; just before it boils add 2 well-beaten eggs, a pinch of salt, and 2 tablespoons of corn-starch dissolved in a little cold milk; stir until it thickens. When cool, flavor with vanilla or lemon.

Whipped Cream Filling.—Whip 1 cup sweet cream to a stiff froth; sweeten and flavor to taste, and spread on. The cream will froth easier if put on ice $\frac{1}{2}$ hour before whipping.

Cream Chocolate Filling.—Take $1\frac{1}{2}$ cups of confectioner's sugar and just enough sweet cream to moisten; mix well, set the vessel containing it in a kettle of hot water and let it come to the boiling point; then add the whites of 2 eggs beaten to a stiff froth, also enough grated chocolate to give a light or dark color, as desired. Beat until cool and stiff; then add a teaspoon of vanilla, spread between and on the top of layer cakes.

Custard Filling.—Use 2 cups milk, 1 cup sugar, 2 eggs, 1 small cup corn-starch, a small piece of butter; boil it and have it slightly cool before using it.

Fig Filling.—Use 3 scant cups pulverized sugar, $\frac{1}{2}$ cup water, whites of 3 eggs well beaten, 1 lb. sliced figs, juice of $\frac{1}{2}$ lemon, 1 teaspoon vanilla. Boil the sugar in the $\frac{1}{2}$ cup of water until it will hair 6 inches from the spoon from which it drops; turn this over the beaten egg whites, and beat until it looks as if it would harden; then turn $\frac{2}{3}$ of it over the figs, to which the lemon juice has been added; put this fig filling between the layers and frost the cake with the reserved frosting, after flavoring it with the vanilla. Can be used in any good layer cake.

Hickory-nut Filling.—Use 1 cup milk, $\frac{1}{2}$ cup sugar, 1 egg, 2 tablespoons corn-starch. Let the milk come to the boiling point, and add the sugar; then mix the corn-starch in a little water, add to the egg, and stir it into the boiling milk; cook till done and stir in 1 cup hickory-nuts chopped fine, and flavor to taste.

Icing Filling.—Put a little water on 2 cups of granulated sugar—just enough to dissolve it; let it boil until it threads from a spoon; pour it slowly on the well-beaten whites of 2 eggs, beating all the time until thick enough to spread on the cake; add a teaspoon of vanilla, or flavor with orange juice and grated rind, and spread on thick as filling for a layer cake.

Lemon Filling.—Use 1 lemon (juice and grated rind), 1 egg, $\frac{1}{2}$ cup sugar, 1

tablespoon of water, butter size of walnut. Beat all together, set on stove and let boil up a minute.

Lemon Honey Filling.—Use 1 lb. loaf sugar, 2 whole eggs, yolks of 8 eggs, $\frac{1}{4}$ lb. butter, juice of 6 lemons, grated rind of 2 lemons. Put the sugar, lemon and butter into a sauce-pan, and melt over a gentle fire; when all is dissolved stir in the eggs which have been well beaten; stir rapidly until it is as thick as honey. Spread this between the layers of cake. Set aside the remainder in a closely covered vessel for future use.

Maple Filling.—Take 1 cup maple sugar, 1 cup white sugar and $\frac{1}{2}$ cup of water; boil until it will form in stiff drops when dropped into cold water; cool until slightly warm, and add whites of 2 eggs, beaten stiff; put between the layers of a cake.

Orange Filling.—Use the whites of 2 eggs beaten stiff, grated rind and juice of 1 orange made thick with pulverized sugar; beat together, and spread between layers of cake.

Orange Filling No. 2.—One cup sugar wet with 3 tablespoons of orange juice (enough drops from the oranges as you slice them, if not, use water); 1 tablespoon of butter. Simmer this on the stove until a nice syrup, and when boiling add 2 beaten eggs; remove from stove and stir briskly. When cold add orange or lemon flavor and the sliced fruit, and spread between the layers.

Peach or Fruit Cream Filling.—Cut peaches into thin slices, or chop them, and prepare cream by whipping and sweetening. Put a layer of peaches between the layers of cake, and pour the cream over each layer and over the top. *Bananas, strawberries* and other fruit may be used the same way, mashing the strawberries when used, and strewing them thick with powdered sugar.

Dried Fruit Filling.—To 4 cups of the best evaporated apples take 3 cups of nice dried raspberries and let them cook slowly for 3 or 4 hours; then work through the colander and add 2 cups of sugar (or more, if preferred) and flavor with vanilla. This is nice for layer cake, short cake, and with meats.

ALMOND CAKE.

2 cups sugar.
4 cups flour.

1 cup of butter.
3 eggs.

1 cup sweet milk.
3 teaspoons baking powder.

Bake in layers as for jelly cake. Instead of jelly use for filling 1 coffee-cup of thick sour jam, 1 teaspoon extract of vanilla, 1 lb. of almonds, blanched and chopped fine; sugar to taste or make sweet.

APPLE JELLY CAKE.

1 egg.
2 cups flour.

1 cup sugar.
3 teaspoons baking powder.

1 cup sweet milk, butter the size of an egg.

Bake in layers, and use the apple filling given among the previous fillings.

AGNES' LAYER CAKE.

$\frac{1}{4}$ cup butter.
 $\frac{1}{2}$ cup sweet milk.

Not quite 1 cup of white sugar.
 $\frac{1}{2}$ teaspoon of soda.

Whites of 3 eggs.
1 teaspoon cream tartar.

CHOCOLATE CAKE.

WHITE PART.

2 eggs.
 $\frac{3}{4}$ cup milk.
1 teaspoon vanilla.

$\frac{3}{4}$ cup melted butter.
2 cups flour.

1 cup powdered sugar.
2 teaspoons baking powder.

DARK PART.

$\frac{1}{2}$ cake Baker's chocolate (grated).

$\frac{1}{2}$ cup milk.

$\frac{1}{2}$ cup sugar.

Put on the stove and boil. Add yolk of 1 egg and mix with the white parts, Bake in 3 layers and put together with soft icing.

CHOCOLATE CAKE NO. 2.

2 cups powdered sugar. 4 eggs. $\frac{3}{4}$ cup butter.
 $\frac{1}{2}$ cup sweet milk. 2 teaspoons baking powder. 2 cups flour (well filled).

Divide into 3 parts and bake 2 layers as mixed. Into the third part mix $\frac{1}{2}$ cup grated chocolate; beat the white of 1 egg; boil 1 cup sugar and 3 spoonfuls of water until it ropes; beat all this white into the cake, and add a cup of grated chocolate (or less, if liked). Ice each layer, putting the dark layer in the center. Splendid.

CHOCOLATE CAKE NO. 3.

1 cup sugar. $\frac{1}{2}$ cup sweet milk. 2 eggs.
 $\frac{1}{2}$ cup butter. 2 cups flour. $1\frac{1}{2}$ teaspoons baking powder.

Bake in layers.

Chocolate Cream for Filling.—Take $\frac{1}{2}$ cup milk, yolk of 1 egg, $\frac{1}{2}$ cup chocolate, 1 teaspoon vanilla, sweeten to taste. Boil until thick as jelly. Spread between layers when cold.

CHOCOLATE CARAMEL CAKE.

2 cups pulverized sugar. $\frac{1}{2}$ cup of chocolate stirred with butter and sugar. 2 teaspoons baking powder.
 1 cup melted butter. 3 cups flour.

Flavor with vanilla and lemon together. Bake in 4 layers.

Filling.—Four cups pulverized sugar—boil till brittle; 4 whites of eggs beaten to a stiff froth. Add the sugar to the whites and beat all until cold; add 1 teaspoon tartaric acid. Flavor with vanilla and lemon. Spread between the layers $\frac{1}{2}$ inch thick, and put enough chocolate in the frosting used for the top to color it.

COCOANUT CAKE.

1 cup butter. 1 cup sweet milk. Whites of 10 eggs.
 2 cups sugar beaten to a cream. $3\frac{1}{2}$ cups flour. $2\frac{1}{2}$ teaspoons baking powder.

Bake in layers.

Filling.—The whites of 2 eggs beaten stiff, and sugar enough added to keep it from running. Spread it on the layers, and sprinkle cocoanut between, and on top of the cake.

COCOANUT CAKE NO. 2.

Whites of 6 eggs. $\frac{1}{2}$ cup of water. 1 teaspoon cream of tartar.
 $1\frac{1}{2}$ cups of sugar. $\frac{1}{2}$ cup of corn-starch. $\frac{1}{2}$ teaspoon of soda.
 $\frac{1}{2}$ cup of butter. $1\frac{1}{2}$ cups of flour.

Bake in layer tins. Then take the whites of 3 eggs and beat to a froth with 6 tablespoons of sugar, and a cup of grated cocoanut. Use it for frosting also.

CREAM CAKE.

1 cup sugar. $1\frac{1}{2}$ cups flour. 2 small teaspoons baking powder.
 3 eggs. 3 tablespoons of water.

Bake in 4 jelly tins, and when done spread the layers with the cream filling given among our fillings. Do not spread on the filling till the cake is cold. If preferred it can be baked in 2 ordinary pie-tins, and split open while it is warm.

BEATEN CREAM CAKE.

1 cup sugar. $\frac{3}{4}$ cup milk. 2 teaspoons baking powder.
 $\frac{1}{2}$ cup butter. 3 whites of eggs. $2\frac{1}{2}$ cups flour.

Bake in 3 layers, and put together with thick sweet cream beaten with a little pulverized sugar.

CHEAP CREAM CAKE.

1 cup sugar. 2 cups flour. 1 tablespoon butter.
 1 cup sweet milk. 1 egg. 1 teaspoon baking powder.

Flavor to suit the taste, and bake in layers.

Filling.—One egg; $\frac{1}{2}$ cup sugar; $\frac{1}{4}$ cup of flour, mixed with a little cold milk,

and stirred into 1 cup of boiling milk; boil until thick, and flavor to taste. Sprinkle the top of the cake well with sugar.

SOUR CREAM CAKE.

1 cup sugar.
2 cups flour.

1 scant teaspoon soda.
2 teaspoons cream tartar.

A little salt.

Break 2 eggs in a teacup, fill it with sour cream, and then stir all the above ingredients well together and bake in 3 layers.

Filling.—Use 1 cup thick sour cream, 1 cup sugar, 1 cup prepared cocoanut. Mix well and spread on each layer and on top. If desired, sprinkle dry cocoanut on with it, as it looks nicer on top.

CREAM PUFFS.

3 cups flour.
1 cup butter.

2 cups boiling water.
5 eggs.

A pinch of salt.

Mix the flour, butter and salt, pour in the boiling water, beat lightly, and put on the stove in a rice boiler; cook until it becomes thick, stirring constantly. Then take it from the stove, let it cool, and then break in the eggs, 1 at a time. Drop on a buttered dripping-pan or gem irons, and bake. Have the puffs baked just before serving time, and use the custard filling given among our fillings, having it slightly cool before putting it in the puffs.

CUSTARD CAKE.

1 cup sugar.
3 eggs, beaten separate.

2 tablespoons cold water,
added to the beaten whites.

1½ cups flour.
1 teaspoon baking powder.

Flavor to taste.

Stir and beat till smooth. Bake in 2 tins in a hot oven, split when hot, and spread with custard. Excellent and not expensive.

DENVER CAKE.

½ cup butter.
1½ cups sugar.

3 cups sifted flour.
6 eggs.

1 cup sweet milk.
2 teaspoons baking powder.

First beat the butter and sugar, and then add the yolks, then the milk; next the flour with the baking powder sifted into it, and the whites beaten to a stiff froth last. This cake must be well beaten. It will make 5 layers. This cake can be made in the mountains. Use any filling desired.

ECONOMICAL LAYER CAKE.

1 cup sugar.
¼ cup of butter.

1 tablespoon corn-starch,
2 cups flour.

1 cup sweet milk.
3 teaspoons baking powder.

Bake in thin sheets. Use cream, cocoanut, jelly or any filling desired.

FIG LAYER CAKE.

1 large cup sugar.
½ cup milk.
½ cup butter.

2 cups flour (sifted).
2 teaspoons baking powder.
4 large or 5 small eggs.

1 teaspoon vanilla extract.

Bake in 4 layers. When cold spread on the following filling.

Fig Filling.—Use ½ pound chopped figs, ¾ cup of hot water, 1 small cup powdered sugar; cook till soft.

IROQUOIS CAKE.

1 cup powdered sugar.
¼ cup butter.
½ cup milk.

1½ cups flour.
2 teaspoons baking powder (scant).
Whites of 3 eggs.

Lemon flavoring.

Cream the butter and sugar, add the other ingredients, and bake in 2 tins. Fill with our icing filling.

JELLY CAKE.

3 eggs.
1 cup sugar.

½ cup butter
½ cup of milk.

2 cups flour.
2 teaspoons of baking powder.

Icing.—Whites of 2 eggs, add sugar until thick, ½ cup flour, ½ teaspoon of tartaric acid, flavor with lemon.

JELLY CAKE NO. 2.

1 cup of sugar. 1 cup of flour. 1 teaspoon cream of tartar.
 3 eggs. 1 tablespoon of butter. $\frac{1}{2}$ teaspoon of soda in $\frac{1}{2}$ cup of milk.
 Bake in layers (6 layers is good) and spread jelly between each layer.

ROCHESTER JELLY CAKE.**LIGHT PART.**

2 cups white sugar. 1 cup sweet milk. 3 cups flour.
 1 cup butter. 6 whites of eggs. 2 teaspoons baking powder.
 Flavor with lemon. Bake in 3 layers.

DARK PART.

1 cup brown sugar. 1 lb. seeded raisins. 2 cups flour.
 $\frac{1}{4}$ cup molasses. $\frac{1}{4}$ lb. citron, chopped fine. A little nutmeg and lemon extract.
 $\frac{1}{2}$ cup butter. $\frac{1}{2}$ teaspoon cloves. $\frac{1}{2}$ teaspoon soda dissolved in $\frac{1}{2}$ cup coffee.
 1 egg. 1 teaspoon cinnamon.

Bake in 2 layers. Spread jelly between the layers, using light and dark parts alternately. Frost the top.

ORIENTAL CAKE.**WHITE AND PINK LAYERS.**

1 cup fine granulated sugar. $\frac{1}{2}$ cup butter. $\frac{1}{2}$ cup corn-starch.
 $\frac{1}{2}$ cup milk. $1\frac{1}{4}$ cups flour. Whites of 3 eggs.
 1 heaping teaspoon baking powder.

Beat butter and sugar to cream, add milk and corn-starch, first stirring them together, then the flour and baking powder, and last the whites of eggs beaten light. Divide the mixture in two, and into $\frac{1}{2}$ put as much pink coloring as you like, the object being to form different colored layers.

YELLOW AND BROWN PARTS.

$\frac{1}{2}$ cup butter. 1 cup sugar. 1 whole egg.
 Yolks of 4 eggs, beaten light. $\frac{1}{2}$ cup sweet milk. $1\frac{1}{4}$ cups flour.
 1 heaping teaspoon baking powder.

After mixing divide into 2 parts, and to 1 part add: 1 oz. grated chocolate, 1 tablespoon of water, 3 teaspoons of sugar and $\frac{1}{2}$ teaspoon of vanilla, which should be stirred until smooth over a hot fire. Bake all the layers in jelly-pans in a moderate oven—it should bake in about 20 minutes.

For filling use 1 cup powdered sugar, and whites of 2 eggs, beaten light. Use the brown cake for the bottom layer, spread over it a thin coating of the filling and cover with a layer of thin slices of figs placed close together; next the yellow cake with icing and sliced oranges free from seeds and rind; next, whites with icing and cocoanut; finish with the pink layer spread with a firm, white icing, decorated with almonds and candies. It is best eaten fresh. This makes a delicious cake. If desired, you can leave out all the filling except the icing.

LAYER JELLY CAKE.

2 cups sugar. $\frac{1}{2}$ cup butter. 3 eggs.
 1 cup sweet milk. 3 cups flour. 2 small teaspoons baking powder.

Makes 8 layers. Use any jelly desired for filling.

ROLLED JELLY CAKE.

1 cup sugar. 2 eggs. 2 tablespoons water.
 $1\frac{1}{2}$ cups flour. $1\frac{1}{2}$ teaspoons baking powder. 1 teaspoon lemon extract.

Bake in a dripping pan in a quick oven. While warm, spread with jelly and roll it.

1-2-3-CAKE.

$\frac{1}{2}$ cup butter. 3 eggs. 2 teaspoons baking powder.
 1 cup milk. 3 cups flour. Flavoring.
 2 cups sugar.

Filling.—Use 1 cup milk, 2 eggs, $\frac{1}{4}$ cup sugar, lump of butter the size of a large hickory-nut; any flavoring desired. Bring the milk to a boil; thicken the egg with flour and add to boiling milk. When off the fire, stir in 1 cup cocoanut. Also sprinkle cocoanut over the top of cake when it is done.

MINNEHAHA CAKE.

Whites of 8 eggs.
1 cup of milk.
Flavor with lemon.

2 cups sugar.
3 cups of flour.

1 cup of butter.
2 teaspoons baking powder.

Filling.—Use $\frac{1}{2}$ lb. blanched almonds, 1 lb. of seeded raisins, chopped fine. Mix with boiled frosting and flavor with lemon. Put blanched almonds in halves in frosting on top.

NEAPOLITAN CAKE.

$1\frac{1}{2}$ cups powdered sugar.
 $\frac{1}{4}$ cup corn-starch.
2 teaspoons baking powder.

$\frac{1}{2}$ cup butter.
 $1\frac{1}{2}$ cups flour.

$\frac{1}{2}$ cup sweet milk.
Whites of 6 eggs.

Take $\frac{1}{3}$ of the mixture and to it add as much grated chocolate as liked (2 or 3 tablespoons) to form the middle layer; put a few raisins in the layer. Spread icing and cocoanut over each layer.

NUT LAYER CAKE.

1 cup of sugar.
2 eggs.

$\frac{1}{2}$ cup butter.
1 teaspoon of baking powder.

$\frac{1}{2}$ cup sweet milk.

Bake in layer tins.

Filling.—Use 1 cup of cream (sweet or sour), 1 cup of sugar, 1 cup hickory-nut meats. Boil together until thick.

ORANGE CAKE.

2 cups of sugar.
1 cup milk.
 $3\frac{1}{2}$ cups flour.

1 cup of butter.
1 teaspoon soda.

4 eggs, all beaten together.
2 teaspoons cream tartar.

The evening before you make the cake, mix sugar, butter and eggs together and let stand, especially if granulated sugar is used. Then in the morning beat up light and add other ingredients and bake in layers in a quick oven. Use the orange filling given among our fillings.

PEACH CAKE.

Bake sponge cake in 3 layers as for jelly cake; take fine ripe peaches, chop fine or slice thin; take cream, whip it, sweeten, and flavor with vanilla if desired; put a layer of peaches and cream between the layers of cake, and cover the top. Eat soon after preparing it.

POLONAISE CAKE.

2 cups pulverized sugar.
1 cup butter (scant).

1 cup milk.
Whites of 7 eggs.

3 cups flour.
 $1\frac{1}{2}$ teaspoons baking powder.

Bake in 4 layers.

Filling.—Use 3 cups pulverized sugar boiled in a little water until brittle; then turn the hot sugar upon the beaten whites of 4 eggs, stirring until cold. On first layer, spread $\frac{1}{2}$ lb. macaroons chopped fine and mixed with some of the frosting. On second layer, $\frac{3}{4}$ lb. crystalized fruit, chopped fine, mix with some of the frosting and flavor with lemon. Third layer, $\frac{1}{2}$ lb. blanched almonds and $\frac{1}{4}$ lb. citron both chopped fine and mixed with some of the frosting, flavored with 1 teaspoon extract of almonds and 1 teaspoon of rose water. Frost the top with the frosting left over, mixed with a little crystalized fruit.

RIBBON CAKE.

2 cups sugar.
1 cup sweet milk.
 $\frac{3}{4}$ cup butter.

3 cups flour.
3 eggs.
1 teaspoon soda.

Essence of lemon or almond.
Salt.

Mix and divide; put one-half into pans. To the other half add

1 tablespoon molasses.
1 large cup raisins
(chopped and stoned).

$\frac{1}{4}$ lb. citron (sliced).
1 teaspoon cinnamon.
1 tablespoon flour.

Grate in a little nutmeg.

Make this also into 2 layers and bake them all. While yet warm build the layers alternately, with cranberry or any other tart jelly between.

RIBBON CAKE NO. 2.

5 yolks of eggs.
 $\frac{1}{2}$ cup butter.

1 cup sugar.
 $\frac{1}{2}$ cup milk.

2 cups flour.
 1 teaspoon baking powder.

Mix and divide. Flavor one half with orange; for the other half use vanilla, and enough grated chocolate to color brown. Take enough for 1 layer out of each half. Then take

$\frac{1}{2}$ cup butter.
 $1\frac{1}{4}$ cups sugar.

$\frac{1}{2}$ cup milk.
 5 whites of eggs.

2 cups flour.
 1 teaspoon baking powder.

Mix and divide. Flavor one half with lemon; flavor the other half with rose water, and with pulverized cochineal color it pink or red. Take enough for 1 layer out of each half. Then mix all the balance of the batter together and put in any kind of fruit desired—seedless raisins, currants or citron. Bake in 5 layers. Build the cake while hot, putting nothing between layers. Have the fruit layers alternate with the brown, white, yellow and red. Frost top or not.

STRAWBERRY CAKE.

Any sponge cake recipe will do. Make the sponge cake dough in very thin layers, and bake in biscuit pans. Beat the whites of 4 eggs, and when stiff add 4 teaspoons of sugar. Have ready a dish of strawberries sweetened enough to take away the acid taste, and spread it between the layers. Cut in small squares and serve cold.

VANITY CAKE.

$1\frac{1}{2}$ cups sugar.
 $\frac{1}{2}$ cup butter.
 $1\frac{1}{2}$ cups sweet milk.

$1\frac{1}{2}$ cups flour.
 $\frac{1}{2}$ cup corn-starch.
 Whites of 6 eggs.

1 teaspoon baking powder.

Bake in 2 cakes, putting frosting between and on top. Excellent.

WHITE CAKE.

1 cup powdered sugar.
 1 cup sweet milk.

1 cup flour.
 Whites of 2 eggs.

2 teaspoons baking powder.
 Flavor with almond.

Bake in layers. Grated cocoanut mixed with sugar can be spread between the layers, or if desired an icing can be made of 1 cup powdered sugar, whites of 2 eggs, and enough dissolved chocolate to give it a rich dark color.

COCOANUT WHITE CAKE.

3 eggs.
 $1\frac{1}{2}$ cups sugar.

$\frac{1}{2}$ cup butter.
 $\frac{1}{2}$ cup sweet milk.

2 cups flour.
 $1\frac{1}{2}$ teaspoons baking powder.

Bake in jelly tins. Make a frosting of the whites of 2 eggs and $\frac{1}{2}$ cup sugar, and beat into it some finely grated cocoanut. Spread it between the layers and on top of the cake and set aside to cool.

LOAF CAKES.**ALMOND CAKE.**

$1\frac{1}{2}$ cups sugar.
 $\frac{3}{4}$ cup butter.
 $\frac{1}{2}$ cup milk.

2 cups flour.
 3 eggs.
 $\frac{1}{2}$ lb. blanched almonds.

2 teaspoons baking powder.

Blanch the almonds, split them lengthwise, dry them, and mix with the cake.

ANGEL'S FOOD.

Take 1 tumbler of flour and put into it 1 teaspoon of cream of tartar and sift the whole 4 times; beat the whites of 11 eggs to a stiff froth and then beat in $1\frac{1}{2}$ tumblers of pulverized sugar, a teaspoon of vanilla, and a pinch of salt; then add the flour and beat thoroughly but lightly; bake in a bright ungreased pan 40 to 45 minutes. When done, turn it over to cool, placing something under the corner of the pan so that the air will circulate underneath and assist the cooling; cut it out when cool.

APPLE CAKE.

¼ cup of butter.	½ cup sugar.	Flour enough to
½ cup of lard—melt these together.	2 eggs.	make rather soft.
2½ cups of milk.	4 teaspoons of baking powder.	

Pare and slice 7 or 8 apples and set them down into the tops of the dough, close together, when it is in the pan. Sprinkle ½ cup of sugar and some cinnamon on top of all. Bake slowly and when the apples are done the cake is done. This makes a dripping pan full.

APPLE CAKE NO. 2.

1 pint preserved apples.	½ cup butter.	1 nutmeg.
1 cup molasses.	1 teaspoon soda.	1 cup boiling water.
1 cup brown sugar.	2 teaspoons cinnamon.	

After this is well mixed together, add 2 well-beaten eggs, and 4 cups flour. To preserve the apples, take 1 quart of chopped apples and stew slowly in 1½ cups of molasses 4 or 5 hours, or until reduced to 1 pint. Bake in a moderate oven. Will keep several weeks.

DRIED APPLE CAKE.

1 egg.	½ cup sugar.	½ cup butter.	½ cup milk.
½ cups flour.	1 teaspoon soda.	2 teaspoons cream tartar.	Spice to taste.

Soak 1 cup of dried apples over night. In the morning boil them 1 hour in ½ cup molasses and ½ cup sugar. When cold, add to the above ingredients. Cheap and good.

BANGOR CAKE.

3 cups flour.	½ cup butter.	2 cups sugar.
3 eggs.	½ cup of milk.	1½ teaspoons baking powder.
Flavor with ¼ teaspoon each of vanilla and lemon.		

BLACK CAKE.

2 cups brown sugar.	1½ cups butter.	6 eggs (beaten separately).
3 cups browned flour.	2 tablespoons molasses.	1 tablespoon cinnamon.
1 teaspoon mace or nutmeg.	1 teaspoon cloves.	2 cups sweet milk.
2 lbs. raisins.	2 lbs. currants.	½ lb. citron.
1 teaspoon soda.	2 teaspoons cream tartar.	Bake 3 hours.

BREAD CAKE.

2 cups dough.	2 cups sugar.	½ cup butter added to ½ cup lard.
1 teaspoon soda.	1½ cups raisins.	2 eggs well beaten.
		Nutmeg and cinnamon.

Work the cake thoroughly.

BUTTERMILK CAKE.

1 cup sugar.	1 teaspoon butter.	1 egg.	1 teaspoon soda.
2 cups flour.	1 cup buttermilk.	Spice to taste.	Cheap and good.

CAMERON CAKE (Without Eggs).

1 cup sour milk.	½ cup butter.	1½ cups sugar.
3 cups sifted flour.	2 cups chopped raisins.	½ teaspoon soda.
Nutmeg and cinnamon to taste.		

CANADA CAKE (Without Eggs).

1 cup sugar.	1 cup sour milk.	½ cup butter.
1 teaspoon soda in the sour milk.	1 cup raisins.	2½ cups flour.

CARSON CAKE (Without Eggs).

2 cups sugar.	4 cups flour.	1 cup buttermilk.	½ cup butter.
2 cups raisins.	1 teaspoon soda in milk.	Spice to taste.	

CHOCOLATE CAKE.

1 cup butter.	2 cups sugar.	1 cup milk.
3½ cups flour.	5 eggs (leaving out the whites of 2).	½ teaspoon vanilla.
2½ teaspoons baking powder.		

For frosting beat the whites of the 2 eggs with sugar enough to keep it from running, and add ½ cake of sweet chocolate; flavor with vanilla. Apply the frosting while the cake is hot.

CLOVE CAKE.

2 cups brown sugar.	1 cup shortening.	1 cup sour milk.
1 cup raisins.	1 egg.	3 cups flour.
½ teaspoon cloves.	1 teaspoon soda.	1 teaspoon of cinnamon.
½ nutmeg.	Add salt.	

CIDER CAKE.

$\frac{1}{2}$ cup butter.	1 cup sugar.	1 egg.	1 cup raisins.
4 cups flour.	1 teaspoon soda.	1 cup cider.	

CITRON CAKE.

3 cups brown sugar.	4 $\frac{1}{2}$ cups flour.	7 eggs.	2 cups citron (cut fine).
1 cup butter.	1 $\frac{1}{2}$ cups sweet milk.	2 $\frac{1}{2}$ teaspoons baking powder.	

COFFEE CAKE.

1 cup brown sugar.	1 cup molasses.	2 teaspoons baking powder.
1 cup butter.	3 eggs, well beaten.	1 cup raisins (chopped).
1 cup strong coffee (cold).	5 cups flour.	Spices to suit taste.

COLD WATER CAKE.

1 cup sugar.	Butter size of egg.	$\frac{1}{2}$ teaspoon soda.
1 cup cold water.	1 pint flour.	1 teaspoon cream of tartar.
1 egg.		

CORN-STARCH CAKE.

$\frac{1}{2}$ cup of butter.	1 cup of sugar.	2 cups of corn-starch.
Whites of 4 eggs.		

Beat the butter and sugar to a cream, then the whites of egg to a stiff froth and mix; beat together and add the corn-starch, a tablespoon at a time, beating constantly. Bake in a tin, lined with buttered paper. It requires a moderate oven, and about an hour's time for baking.

CORN-STARCH CAKE NO. 2.

2 cups sugar.	4 eggs.	1 teaspoon soda.
1 cup butter.	2 cups flour.	2 teaspoons cream of tartar.
1 cup sweet milk.	1 cup corn-starch.	

Sift soda, cream tartar, corn-starch and flour all together. Then stir it in the other ingredients and flavor with vanilla or lemon.

CREAM CAKE.

2 eggs.	1 cup thick sour cream.	1 teaspoon saleratus (put
1 cup sugar.	2 $\frac{1}{2}$ cups flour.	into the cream).

DELICATE CAKE.

2 cups flour.	$\frac{1}{2}$ cup butter.	$\frac{1}{2}$ cup sweet milk.	1 $\frac{1}{2}$ cups sugar.
1 teaspoon cream tartar.	$\frac{1}{2}$ teaspoon soda.	Whites of 4 eggs.	Flavor to taste.

DATE CAKE.

$\frac{1}{2}$ cup butter.	1 cup sugar, rounding full.	2 eggs, well beaten.
1 cup sweet milk.	1 teaspoon soda.	2 teaspoons cream tartar.
2 $\frac{1}{2}$ cups flour.	1 heaping cup prepared dates.	$\frac{1}{2}$ teaspoon lemon extract.
A dash of nutmeg.		

Prepare the dates as directed in the introduction to this chapter, and stir them in the last thing. Bake in a shallow pan; cut in squares.

DOUGH CAKE.

1 cup raised bread dough.	2 eggs.	$\frac{1}{2}$ cup butter.
1 cup of sugar.	1 teaspoon cinnamon and a	$\frac{1}{2}$ teaspoon soda.
1 cup chopped raisins (seeded).	little nutmeg.	

Mix the dough and butter thoroughly with the hand, then the sugar, then the eggs. Do not let it stand to rise, but put it in a bread-pan as soon as mixed and bake for an hour, in a moderate oven.

DOUGH CAKE (Economical).

2 lbs. raised dough.	2 cups sugar.	$\frac{1}{2}$ cup butter.
1 teaspoon saleratus.	$\frac{1}{2}$ a nutmeg (grated).	1 lb. raisins (seeded).

Mix well, put in greased pans, let rise about $\frac{3}{4}$ hour, and bake in a moderate oven.

FOUNTAIN CAKE.

2 cups sugar.	1 heaping cup butter.	1 cup milk.
Yolks of 6 eggs.	2 cups flour.	1 teaspoon cream tartar.
$\frac{1}{2}$ teaspoon soda.	Vanilla, almond, or any other flavor.	

Mix the above and stir in quickly the well-beaten whites of 4 of the eggs, reserving the whites of 2 of the eggs for the frosting. Bake in loaves, and as soon as done, cover with frosting.

FEATHER CAKE.

2 cups sugar.
3 cups flour.
Flavor with lemon.

$1\frac{1}{2}$ cups butter.
3 eggs.

$\frac{1}{2}$ cup milk.
3 teaspoons baking powder.

This also makes a nice layer cake with jelly or chocolate between.

FREEMAN CAKE.

1 cup sugar.
 $\frac{1}{2}$ cup milk.

$1\frac{1}{2}$ cups flour.
1 full teaspoon baking powder.

1 cup currants.
A few slices citron.

$\frac{1}{2}$ cup butter.
Cloves and nutmeg.

Bake in sheets; ice and cut in squares.

FRENCH LOAF CAKE.

5 cups sugar.
10 cups flour.
1 lb. currants.

3 cups butter.
 $\frac{3}{4}$ cup of molasses.
 $\frac{1}{4}$ lb. citron.

2 cups sweet milk.
3 nutmegs.
 $2\frac{1}{2}$ teaspoons baking powder.

6 eggs.
1 lb. raisins.

FRUIT CAKE.

$\frac{1}{2}$ cup butter.
 $1\frac{1}{4}$ cups flour.
Cinnamon, citron, and cloves.

$\frac{1}{2}$ cup brown sugar.
 $\frac{1}{2}$ cup sweet milk.

$\frac{1}{2}$ cup molasses.
 $\frac{1}{2}$ teaspoon soda. 1 egg.
1 cup chopped raisins.

Flour the raisins before adding.

FRUIT CAKE No. 2.

4 eggs, well beaten.
 $\frac{1}{4}$ cup water.

$\frac{1}{2}$ cup butter.
1 teaspoon soda.

1 cup sugar.
1 cup raisins (seeded). $\frac{1}{2}$ cup molasses.

Flour to make about as thick as common stirred cake (not too thick). It makes a large cake, and is economical and good.

FRUIT CAKE (Economical).

$2\frac{1}{2}$ cups sugar.
 $\frac{1}{2}$ cup sour milk.
1 cup raisins, currants, and citron, mixed.

$\frac{1}{2}$ cup butter.
1 teaspoon soda.
1 lb. citron.

6 cups flour (about that).
 $\frac{1}{2}$ teaspoon each of ground cloves, cinnamon and nutmeg.

Knead all together, roll about 2 inches thick, and bake in a quick oven.

FRUIT CAKE (Rich).

1 lb. flour.
2 lbs. currants.
1 teaspoon rose-water.

1 lb. sugar.
1 lb. citron.
Juice of 2 lemons.

$\frac{3}{4}$ lb. butter.
 $\frac{1}{4}$ lb. almonds.
10 eggs.

2 lbs. seeded raisins.
 $\frac{1}{2}$ oz. mace.

Stir the sugar and butter to a cream, then add the whites and yolks of the eggs, beaten separately. Stir in the flavoring, then the lemon-juice and spice. Add the flour, then fruit just before it is put in the pans. Allow 2 hours to bake if in 1 loaf.

STEAMED FRUIT CAKE.

2 cups brown sugar (heaped).
2 eggs.
3 lbs. raisins.
 $\frac{1}{2}$ tablespoon each cinnamon and cloves.

$\frac{1}{2}$ cup butter (full).
1 teacup milk.
1 lb. citron.

4 cups flour.
 $\frac{3}{4}$ cup molasses.
1 nutmeg, grated.

Put in a pan and steam 3 hours; then place in the oven 1 hour to dry.

WHITE FRUIT CAKE.

2 cups white sugar.
Whites of 5 eggs.
1 lb. almonds, blanched and cut fine.

1 cup butter.
 $3\frac{1}{2}$ cups flour.
1 lb. citron cut in thin slices.

1 cup sweet milk.
2 teaspoons baking powder.
1 grated cocoanut.

Flour the fruit and add it the last thing.

GOLD CAKE.

Yolks of 4 eggs.
2 cups flour.

$\frac{1}{2}$ cup butter (scant).
2 teaspoons baking powder.

1 cup sugar. $\frac{1}{2}$ cup sweet milk.
Flavor with lemon.

GRAHAM CAKE.

$\frac{1}{2}$ cup butter.
1 teaspoon soda.

1 cup sugar.
 $\frac{1}{2}$ nutmeg, grated.

1 cup sour milk.
 $\frac{1}{2}$ cup raisins (seeded).

$3\frac{1}{2}$ cups graham flour.

OLD HARTFORD ELECTION CAKE.

5 lbs. dried and sifted flour.
3 gills of distillery yeast or twice that quantity of home-brewed.

2 lbs. butter. 2 lbs. sugar. A gill of lemon-juice.
4 eggs. $\frac{1}{2}$ oz. nutmeg. 1 quart milk.
2 lbs. seeded raisins.

Rub the butter very fine into the flour, add $\frac{1}{2}$ the sugar, then the yeast, then

$\frac{1}{2}$ the milk—hot in winter or blood-warm in summer—then the eggs, well beaten, the lemon-juice, and the remainder of the milk. Beat it well and let it stand to rise all night. Beat it well in the morning, adding the sugar, raisins and spices. Let it rise 3 or 4 hours, put in pans and bake.

HASTY-CAKE.

1 tablespoon butter.	1 cup powdered sugar.	$\frac{1}{2}$ cup milk.
1 egg.	2 cups flour.	3 small teaspoons baking powder.

Bake immediately in a quick oven. It may be baked in patty tins or in a loaf. It is very nice while fresh.

HICKORY-NUT CAKE.

2 eggs.	$\frac{1}{2}$ cup sweet milk.	1 teaspoon baking powder.
$\frac{1}{2}$ cup butter.	$1\frac{1}{2}$ cups flour.	1 cup hickory-nut meats (chopped).

Beat the eggs, sugar and butter together, add the milk, then the flour (with baking powder sifted in) and last the hickory-nut meats. Frost it when baked, mark in squares, and put a nut meat in each square.

IMPERIAL CAKE.

1 cup butter (heaped).	$\frac{1}{2}$ the grated rind of 1 lemon.	$\frac{1}{4}$ teaspoon soda.
1 cup sugar (heaped).	5 eggs, beaten separately.	$\frac{1}{2}$ lb. raisins.
2 teaspoons lemon juice.	2 cups flour (level).	$\frac{1}{2}$ cup walnuts (chopped).

Bake in a moderate oven $1\frac{1}{4}$ hours. Flour the fruit with a scant tablespoon of flour extra.

LADY'S CAKE.

4 cups sugar.	Whites of 16 eggs.	2 teaspoons almond extract.
1 cup butter (scant).	3 cups sifted flour.	

LEMON CAKE

1 cup butter.	$4\frac{1}{2}$ to 5 cups flour.	Rind and juice of 2 lemons.
6 eggs.	1 cup sweet milk.	1 teaspoon soda.
3 cups sugar.		

One half of this makes 1 good loaf.

ICE CREAM CAKE.

Whites of 8 eggs.	1 cup of corn-starch.	2 teaspoons baking powder.
2 cups of sugar.	1 cup of butter.	1 cup of milk.
2 cups of sifted flour.		

MARBLE CAKE.**LIGHT PART.**

$1\frac{1}{4}$ cups white sugar.	$\frac{1}{2}$ cup sour milk.	2 cups flour.
$\frac{1}{2}$ cup butter.	Whites of 4 eggs.	$\frac{1}{4}$ teaspoon soda.

DARK PART.

1 cup brown sugar.	1 teaspoon each of cinnamon and cloves.	2 cups flour.
$\frac{1}{2}$ cup molasses.	$\frac{1}{2}$ teaspoon allspice.	$\frac{1}{2}$ teaspoon soda.
$\frac{1}{2}$ cup butter.	Yolks of 5 eggs.	1 teaspoon nutmeg.
$\frac{1}{2}$ cup sour milk.		

Put alternate spoonfuls of each part into a buttered cake tin and bake.

CHOCOLATE MARBLE CAKE.

1 cup butter.	2 cups sugar.	1 cup corn-starch.	4 eggs, beaten separate.
1 cup sweet milk.	2 cups flour.	1 teaspoon soda.	2 teaspoons cream tartar.
Flavor with vanilla.			

After mixing all, take out 1 cupful of the batter and stir into it a heaping tablespoon of grated chocolate; drop this in the greased pan alternately with the other part.

MOLASSES CAKE (Without Eggs).

1 cup butter, lard or dripping.	1 cup sugar.	1 cup hot water.
1 cup molasses.	5 cups flour.	1 cup Zante currants.
1 teaspoon each of cinnamon, cloves and allspice.		

Put in 2 bread-pans, with buttered paper, and bake an hour in a slow oven. Cheap and good.

ONE-EGG CAKE.

1 cup butter.	$1\frac{1}{2}$ cups sugar.	3 cups flour.
1 cup sweet milk.	1 egg.	1 teaspoon baking powder.
1 cup chopped raisins.		

MOUNTAIN CAKE.

1½ cups sugar.
½ cup milk.
Flavor to taste.

3 eggs.
2 large cups flour.

¾ cup butter.
2 teaspoons baking powder.

Add a little more flour if fruit is added.

NEWPORT CAKE.

2 eggs.
¾ cup melted butter.

1½ cups sweet milk.
3 cups flour.

2 tablespoons sugar.
2 rounding teaspoons baking powder.

Stir all together and bake in a quick oven; cut warm, and eat like biscuit.

ORANGE CAKE.

2 cups sugar.
2 cups flour.
½ cup water.

Yolks of 5 eggs.
Whites of 4 eggs.
1 orange, juice and grated rind.

½ teaspoon soda.
1 teaspoon cream of tartar.

PLUM CAKE.

3 large cups butter.
4 cups sifted flour.
1 lb. citron, cut in thin small slices.
1 teaspoon each cinnamon and allspice.

2 cups sugar (heaped).
3 lbs. raisins, stoned and halved.
½ teaspoon each mace and cloves.

12 eggs, beaten separate.
1½ lbs. currants.
½ lb. dates.
½ nutmeg.
3 tablespoons strawb'ry jam, added last.

Flour the fruit before adding it; beat the mixture thoroughly, and bake in well-buttered tins for 4 hours, keeping a steady heat.

POOR MAN'S CAKE.

1 cup sugar.
1 tablespoon butter.

2 cups flour.
1 cup raisins.

1 teaspoon saleratus, dissolved in
1 cup sour milk.

PORK CAKE.

1 cup boiling water poured over
1 lb. fat pork, chopped fine.
1 lb. raisins.

2 cups sugar.
1 cup molasses.

1 teaspoon soda.
Spices to taste.

Stir in flour until quite stiff and bake slowly.

POUND CAKE.

1 lb. butter.
1 lb. white sugar.
12 eggs, beaten separately.

1 lb. flour.
½ teaspoon mace.

1 nutmeg (grated).
3 tablespoons rose-water.

QUICK CAKE.

2 eggs.
½ cup butter.

¼ cup sweet milk.
½ cup sugar.

1½ teaspoons baking powder.

Add flour until it will not drop from the spoon. Can be eaten warm.

RAISED CAKE.

1 cup sugar.
½ cup butter.
2 eggs.

1 cup sponge.
½ cup flour.
1 teaspoon soda.

1 cup raisins.
Spice to taste.
Let rise 2 hours.

RAISIN CAKE (Economical).

½ cup sugar.
½ cup molasses.
1 egg.
¼ cup butter.

½ cup hot water.
½ teaspoon soda.
1 cup raisins.
1 teaspoon each cinnamon and cloves.

Flour to make stiff enough to hold a spoon.

RAISIN CAKE.

2 cups sugar.
2 cups butter.
1 cup rose-water.
2 cups milk.

2 cups molasses.
8 eggs.
Juice of 2 lemons.
7 cups flour.

1 teaspoon soda.
4 cups seeded raisins.

SILVER CAKE.

Whites of 5 eggs.
2 cups white sugar.

½ cup butter.
4 cups flour.

2 teaspoons baking powder.
Beat all well.

SNOW CAKE.

1 cup butter.
2 cups sugar.
Whites of 5 eggs.

1 scant cup milk.
3 cups flour.
2 teaspoons baking powder.

Flavor with vanilla.
Bake in small round tins.

SPONGE CAKE.

4 eggs.
1 cup of sugar.

3 tablespoons of water.
2 teaspoons of baking powder.

1 cup of flour.
Flavor with vanilla.

BERWICK SPONGE CAKE.

6 eggs.	2 teaspoons baking powder.	5 cups of flour.
1 cup of water.	3 cups granulated sugar.	Juice and grated peel of 1 lemon.

Beat the eggs 2 minutes; add the sugar and beat 5 minutes, then 2 cups of flour and beat 2 minutes; add the water, lemon juice and peel with a pinch of salt and beat 1 minute. Have the baking powder mixed with the remaining 2 cups of flour; add, and beat 1 minute. Bake slowly $\frac{3}{4}$ of an hour in 2 deep bread-pans.

COCOANUT SPONGE CAKE.

6 eggs, beaten separately.	1 teaspoon salt.	$\frac{1}{2}$ nutmeg (grated).
1 cup sugar (heaped).	1 teaspoon lemon essence.	Grated cocoanut.
1 cup flour.		

Beat the yolks and sugar together, then add the flour, salt, lemon essence and nutmeg; then the beaten whites and the cocoanut last. Stir all well together and put it about $\frac{1}{2}$ inch deep in tins lined with well-buttered paper. Bake in a quick oven 30 minutes.

CORN-STARCH SPONGE CAKE.

1 cup pulverized sugar.	$\frac{1}{2}$ cup corn-starch.	Whites of 8 eggs, well beaten.
$\frac{1}{2}$ cup flour.	2 teaspoons baking powder.	Flavor with lemon.

Mix the flour, sugar, corn-starch and baking powder together dry, sifting all several times, and stirring thoroughly; then add the eggs and lemon flavor, and bake immediately. It is best baked in a long deep pan. It also makes an excellent roll jelly cake. This quantity is enough for 2 large rolls; bake in long shallow tins; as soon as done remove on a clean cloth, spread with jelly, and roll up at once.

CREAM SPONGE CAKE.

2 eggs, broken into	A pinch of salt.	2 teaspoons baking powder.
1 teacup of cream.	2 cups sifted flour.	1 teaspoon lemon essence.
1 cup white sugar.		

Beat together for 5 or 10 minutes, and bake in a square baking-tin 15 minutes.

SPICE CAKE.

2 cups brown sugar.	Yolks of 2 eggs.	1 teaspoon allspice.
$\frac{1}{2}$ cup butter (scant).	White of 1 egg.	$\frac{1}{2}$ teaspoon cloves.
2 $\frac{1}{2}$ cups flour.	1 teaspoon soda.	$\frac{1}{2}$ nutmeg (grated).
1 cup sour milk.	2 teaspoons cinnamon.	

TOLMAN CAKE.

1 cup butter.	2 cups sugar.	1 cup sweet milk.	3 cups flour.
$\frac{1}{2}$ cup corn-starch.	4 eggs.	2 teaspoons baking powder.	Flavoring of any kind.

TROY CAKE.

Whites of 5 eggs.	1 $\frac{1}{2}$ cups sugar.	$\frac{1}{2}$ cup butter.
1 cup milk.	3 cups flour.	2 teaspoons baking powder.

Divide the mixture, and color $\frac{1}{2}$ with strawberry coloring, and flavor with vanilla; flavor the other part with lemon. Put in the white, then the pink, and bake slowly.

WEDDING CAKE.

2 lbs. butter.	2 lbs. white sugar.	18 eggs, beaten separately.
1 cup molasses.	Juice of 2 lemons.	1 teaspoon saleratus.
3 tablespoons cloves	2 tablespoons each of mace,	$\frac{1}{4}$ lb. citron, cut thin and small.
(ground).	allspice and nutmeg.	4 lbs. seedless raisins or currants.
2 lbs. flour.		

Cream the butter and add the sugar, then the molasses, lemon, and spices; then the beaten yolks, beating all well together, then the flour with saleratus sifted in, and last the beaten whites. Beat all together thoroughly. Flour the fruit and add last. Bake slowly 4 hours, or longer, if needed. The cake will keep for years.

WHITE CAKE.

$\frac{1}{4}$ cup butter.	1 $\frac{1}{4}$ cups white sugar.	1 cup sweet milk.
Whites of 3 eggs.	3 cups flour.	2 teaspoons baking powder.
Flavor with lemon or vanilla.		

GROOM'S CAKE.

2 cups butter (heaped).
4 cups flour.
½ lb. citron (shaved fine).

2 cups white sugar (heaped).
2 lbs. almonds, blanched and
chopped.

10 eggs, beaten separately.
1 lb. raisins (seeded).

Stir the almonds into the cake; flour the raisins and citron and put a layer in the cake-pan, then put in a layer of cake, then fruit again, and so on alternately, finishing with cake. Bake 2 hours in a moderate oven.

WHITE CAKE (Economical).

1 cup granulated sugar.
2½ cups flour.
Nutmeg, or any flavoring desired.

3 tablespoons nice fat.
1 teaspoon soda.

1 cup milk.
2 teaspoons cream tartar.

Add raisins or currants if liked; bake in a rather slow oven. It resembles old-fashioned election cake.

WHITE PERFECTION CAKE.

3 cups powdered sugar.
3 cups flour.
2½ teaspoons baking powder.

1 cup butter.
1 cup corn-starch.

1 cup sweet milk.
Whites of 12 eggs.

Caramel Icing.—2 cups powdered sugar; ⅔ cup sweet milk, 1 tablespoon of butter. Boil 10 minutes and stir while boiling; then set the dish in cold water and stir until cold.

WHORTLEBERRY CAKE.

1 cup butter.
1 cup sweet milk.
1 teaspoon each cinnamon and
nutmeg.

2 cups sugar.
3 cups flour.
4 cups fresh whortleber-
ries.

5 eggs, beaten separately.
1 teaspoon soda.

Be careful not to bruise the berries, adding them last. Bake in a moderate oven.

GINGER CAKE (Without Eggs).

1 cup molasses. 1 cup sugar.

1 cup milk.

½ cup butter.

5 cups sifted flour. 1 tablespoon ginger. ½ teaspoon soda. A little cloves if liked.

Melt the butter and molasses in the sugar, allow the mixture to become hot, and then add spices, milk with soda, and flour. It is a good plan to try a small cake first, and if it falls add more flour.

GINGERBREAD.

2 cups sugar.
3 cups flour.
1 tablespoon baking powder.

2 eggs.
1 teaspoon ginger.

½ cup butter.
1 cup sweet milk.

Bake in a thin sheet, and while hot, sprinkle granulated sugar on top. Cut in squares. (See our article on "Frosting and Icing" for the method of glazing gingerbread.)

HARD GINGERBREAD.

1 cup molasses.
1 teaspoon ginger.

¾ cup shortening.
½ teaspoon salt.

1 teaspoon soda.
Flour enough to roll out like pie-crust.

HARD GINGERBREAD NO. 2.

1 cup sugar.
½ cup butter.

2 eggs.
1 teaspoon salt.

1 teaspoon of ground ginger.
1 heaping teaspoon baking powder.

Mix hard, and roll thin. Bake in large dripping-pan, if you have not sheets of tin.

HARD GINGERBREAD (Without Eggs).

1 cup molasses.
1 teaspoon soda dissolved in ½ cup water.

½ cup butter.
½ cup water.

1 teaspoon ground ginger.
1 level teaspoon salt.

Mix hard and roll thin, and bake as above.

HOT WATER GINGERBREAD.

1 cup molasses.
2 tablespoons sour milk.
1 teaspoon soda.

½ cup hot water.
1 large cup flour.

2 tablespoons butter.
½ teaspoon ginger.

RICH SOFT GINGERBREAD.

1 small cup of molasses.
1 cup of sugar.

1 cup of butter.
2 eggs.

1 teaspoon each of ginger and salt.
1 teaspoon of soda.

Make a stiff dough with flour, and bake in square tin.

ORMSKIRK GINGERBREAD.

1 cup brown sugar (heaped).	1 tablespoon ginger (heaped).	¼ lb. citron (cut fine).
1 cup butter (heaped).	½ nutmeg (grated).	5 level cups flour.
1 cup molasses.		

Work butter and sugar together, add the molasses, flour, and ginger, grate in the nutmeg, and stir in the citron. Let the dough stand over night; then roll thin, cut in shapes with a biscuit cutter and bake in a quick oven. It makes a delicious hard gingerbread.

SOFT GINGERBREAD.

Butter the size of an egg.	1 teaspoon of soda dissolved in	1 teaspoon of salt.
1 cup molasses.	1 cup of water.	
1 teaspoon of ginger.		

Mix stiff and bake in a square tin.

RAISIN GINGERBREAD.

3 eggs.	1 cup chopped raisins.	2 cups of flour.
1 cup molasses.	1 tablespoon of soda.	Spice to taste.
1 cup sour milk.		

SPICE GINGERBREAD.

1 cup butter.	1 cup sour cream.	Ginger, cinnamon, cloves and
1 cup molasses.	4 eggs.	nutmeg to taste.
3 cups flour.	1 teaspoon of soda.	Bake in square tins.
1 cup sugar.	½ cup of dried currants.	

SOUR CREAM GINGERBREAD.

1 cup molasses.	½ cup shortening (part butter and	2 teaspoons soda.
1 cup sugar.	part meat dripping).	1 tablespoon ginger (or
1 cup thick sour cream.	1 egg.	more to suit taste).

Stir all together, dissolve soda in a little water, use flour enough to make a medium stiff batter, but not too stiff as that will spoil the effect. Bake in a good sized dripping-pan so the cake will be 1½ inch thick.

SOUR MILK GINGERBREAD.

1 egg.	½ cup sour milk.	1 level-teaspoon ground ginger.
Butter the size of an egg.	1 level teaspoon soda.	2 cups flour.
½ cup molasses.		

Bake in a flat tin, not as a loaf.

SUGAR GINGERBREAD.

1 cup sugar.	2 eggs.	1 heaping teaspoon ground ginger.
½ cup butter.	1 level teaspoon of salt.	½ teaspoon of soda.
½ cup sour milk.		

Mix hard and roll thin. Bake on sheets of tin or in the dripping-pan.

FROSTING AND ICING.

Frosting or icing made from the beaten white of egg and sugar, serves for all kinds of ornamentation, both for cakes and pastry. The eggs can be beaten in a flat dish, with a fork, until stiff, and then the sugar added, and then the flavoring; or the sugar and eggs can be beaten together. Frosting cannot be made satisfactorily unless the sugar used is the powdered kind, made expressly for this purpose. The proportions are 1 egg to ½ of a cup, or 10 heaping teaspoons, of sugar. If an acid flavor like lemon is used, a little more sugar will be needed; the size of the egg must also be considered. If an insufficient quantity of sugar is used icing will not harden. A little sweet cream, lemon-juice or vinegar softens icing so that it crumbles less readily. The egg and sugar must be thoroughly beaten, some insisting on 30 minutes beating and others on only 5 minutes! If the eggs do not beat readily a pinch of salt can be added, which will help some. Have the frosting all beaten and ready before the cake comes out of the oven. The frosting should be put on while the cake is warm, but not while it is hot. If there are several cakes, and some of them cool while the others are being iced, they can be set in the oven and warmed before being frosted. A heavy frosting put directly on to a cake will inevitably peel on

account of the moisture or oiliness of the cake. A little flour dusted on a cake and then the loose particles rubbed off is a good preventive against the cracking of the frosting; or a little gelatine dissolved in boiling water and applied hot is sometimes used. An inverted milk-pan is a good thing on which to set the cake while applying the frosting. Dip the knife often in cold water if the frosting is stiff, and smooth it off nicely. If it is desired to frost the top only, strips of paper, well oiled, can be pinned around the cake, extending above the top, to prevent the icing from running down the sides; and removed when it cools. After icing, the cake can be set in a very cool oven to dry and harden for a short time, but do not let the top become colored; or set it in the warm sun. If nuts, raisins, or similar articles are put on for ornaments they should be added while the icing is moist. Piping is done when the icing is dry. All iced cakes should be kept in a very dry place.

It will please a child when making cake to make a small one for her; cover with white frosting, and when that hardens, write the child's name on top with a small brush dipped in the yolk of egg. Children will be more pleased with some simple cake, not much more than sweetened bread, and ornamented for them, than they would be by the richest plum cake unornamented, and which they could not eat with safety.

Any frosting left over can be made into little wafers, dried in the oven, and used for decorating various dishes.

COLORS FOR FROSTINGS, CANDIES, ETC.

A Caution.—Nothing but vegetable colors should ever be used for frostings, candies, or any cooking purposes. As some of the coloring matters sold in the stores (and too often used by the uninformed) are deleterious or even poisonous, it is better, when possible, to prepare all coloring matters at home. We give the best of those which are adapted for domestic use, and they will meet all the ordinary wants of our readers.

To Whiten Frosting.—A few drops of lemon-juice whitens frosting; so does a small pinch of cream of tartar.

For an amber coloring mixture put $\frac{1}{2}$ oz. turmeric in 2 oz. deodorized alcohol; shake till dissolved, strain it, and bottle for use.

Blue frosting is colored with indigo. It does for ornamental icing, but is better not eaten.

Brown frosting may be made by adding caramel to gelatine frosting; or by beating the whites of the eggs with nice maple sugar.

For chocolate color add a little chocolate or cocoa.

Pink frosting may be made by adding cranberry, strawberry, or raspberry juice from which the seeds have been strained; the jelly can also be strained and used, or a little cochineal will produce the color.

Yellow frosting may be made by adding a trifle of strong saffron tea (if too much is used it is apt to impart a bitter taste). Or grate the rind of an orange into some orange juice, let it soak about 1 hour; strain, and use for coloring. Lemon peel can be used the same way. (These are preferable to the saffron. See what we say elsewhere about how to grate orange peel.)

A very pretty tint for frosting white cakes is made by beating together 1 cup of white sugar and the yolks of 3 eggs; flavor with lemon.

Carmine color can be made by mixing $1\frac{1}{2}$ oz. boiling water, $\frac{1}{2}$ oz. ammonia, and $\frac{1}{2}$ oz. No. 40 carmine; bottle, cork closely, and it will keep any length of time.

Cochineal Coloring.—Boil 1 oz. of powdered cochineal and 5 grains of baking soda in 1 cup of water, in an earthen vessel till reduced $\frac{1}{2}$; then add $\frac{1}{4}$ oz. cream of tartar and the same of powdered alum; boil 10 minutes, strain through cloth, and bottle. Adding a little alcohol will make it keep any length of time.

A Red Color for confectionery, jellies, etc., is sometimes prepared by boiling sliced beetroot in a little water, and then squeezing it through a cloth.

Saffron.—Boil thoroughly 1 oz. of saffron in 2 cups of water; strain through cloth and bottle for use. In using this, the shade may be varied by using more or less of it. (The objection to saffron is its tendency to impart a bitter taste if too much is used.)

Spinach Green.—Carefully trim the leaves from some young spinach, wash them, pound them to a pulp, add a little water, and boil till it curdles; then strain.

This juice can be used fresh, or it can be worked up into colored sugar, and kept for future use.

Coloring Almonds.—Almonds can be given a *yellow color* by splitting them in two after blanching, and putting them in the oven till they get a light golden tinge. They can be tinged *pink* or *red* with cochineal mixed with a little syrup, rubbing the almonds in it, and drying them in a cool oven. *Green coloring* is produced in the same way with spinach green. Only vegetable colorings should be used for this purpose.

Coloring Sugar.—Dry granulated sugar can be tinted by working in enough of the desired tint to color the sugar; then dry the sugar, powder it, and bottle for use.

Flavoring sugar is done in various ways. It can be pounded, adding the flavoring during the process; then sift through a fine sieve, and bottle for use. For 1 lb. of sugar, 2 oz. of either lemon or orange peel will be sufficient. Other flavors can be obtained by using instead 1 oz. of ginger, or 2 oz. of cinnamon, or $\frac{1}{2}$ oz. of cloves. We have previously explained how to prepare vanilla sugar.

Prepared Caramel.—Caramel is crystallized sugar heated to 420° F. when it decomposes, loses its power of crystallizing and fermenting, and acquires a dark brown color and a bitter flavor. It can be prepared as follows: Put 2 cups of granulated sugar in the frying-pan, add 1 tablespoon of water, and heat it over a clear fire, stirring continually, till it assumes a dark brown color, is brittle, and bitter to the taste, but do not burn it. Then add slowly 2 cups hot water, stir constantly, and boil 10 minutes and let it cool. If it candies when cool, add water and boil again. Bottle when cold, keep corked, and it will never spoil. It is used to flavor or color custards, sauces, soups, broths, gravies, etc., and has so many uses that it is well to always keep it on hand.

FROSTING AND ICING.

Plain Frosting.—Beat 2 eggs to a stiff froth, and gradually work in 1 cup powdered sugar and 2 teaspoons corn-starch. Flavor with lemon.

Almond Frosting.—Make like raisin frosting, but use 1 cup blanched sweet almonds instead of the raisins.

Boiled Frosting.—The white of 1 egg, 1 cup granulated sugar. Beat the egg to a stiff froth. Put just enough boiling water on the sugar to melt it, then boil to a thick syrup; pour the boiling syrup over the beaten egg, and beat until it is thoroughly mixed. Add flavor. Pour over the cake while hot. If too much boiled, the tendency of the frosting will be to dry before it cools, but 1 or 2 drops of hot water added while using will remedy it.

Chocolate Frosting.—Beat the whites of 2 eggs to a stiff froth, stir in 1 teacup of pulverized sugar and six tablespoons of grated chocolate; mix well, and spread on while the cake is hot.

Boiled Chocolate Frosting.—Boil together 1 cup of light brown sugar and $\frac{1}{2}$ cup of water. Remove it from the stove as soon as it strings from the spoon, and stir in the whites of 2 eggs beaten to a stiff froth, together with $\frac{1}{4}$ cake of Baker's chocolate, finely grated. Spread this between the layers of the cake, and over the top while the frosting is warm.

Easily-Made Frosting.—Allow a full half cup of pulverized sugar to the white of 1 egg, stirring it in instead of beating the egg; spread it smoothly over the cake and set away to dry and you will find that the icing made in this way will cut without breaking, and be smoother than when beaten in the old way. The icing made from the white of 1 egg is enough for an ordinary sized cake. Flavor, if desired, to suit the taste.

Gelatine Frosting.—One teaspoon gelatine put to soak in $1\frac{1}{2}$ tablespoons of cold water, and allowed to stand till it becomes a little soft. Now add 2 tablespoons boiling water, and let the mixture boil a minute. Soak it in a cup in which it can boil. Measure, and pour upon a large plate, and to every tablespoon of the

liquid add 4 tablespoons of powdered sugar rolled and sifted to free it from lumps. Beat well, as the longer it is beaten the lighter and whiter it becomes. Flavor with 1 teaspoon rose or vanilla extract. Have the cake cold. This quantity is enough for 2 pies or 1 loaf of cake. It can be put on very thick, will not crumble, cuts as well as the cake itself, and is not sticky.

Isinglass Frosting.—Pour 1 coffee-cup of *hot* water on 1 sheet isinglass, then leave it to dissolve in a warm place. When quite dissolved, and there is no scum, stir in 1 large teaspoon corn-starch and 2 heaping cups of pulverized sugar. Pour it on the cakes when they are cold, do not smooth it much, and let it harden in a cool place. More easily made than the ordinary frosting.

Maple Syrup Frosting.—This is made by adding the beaten white of 1 egg to 1 cup of good maple syrup.

Milk Frosting.—Boil together 2 cups sugar, $\frac{3}{4}$ cup of milk, and 1 tablespoon of butter for 10 minutes; remove from the stove, and beat until creamy and thick enough to spread. Add $\frac{1}{2}$ teaspoon of vanilla.

Raisin Frosting.—Put 1 cup white sugar in 2 tablespoons warm water, and boil 5 minutes; pour it over the beaten white of 1 egg, and beat well; then add 1 cup chopped raisins.

Soft Frosting.—Take 1 cup sugar and $\frac{1}{2}$ cup milk, and boil until it will drop in strings from the spoon; then put in a bowl, add 1 teaspoon of flour, and beat a few minutes; let stand until cool, and thick enough to spread on cake without running.

Boiled Icing.—Stir 1 cup granulated sugar in 1 cup water, and set on the stove to boil; do not stir after it begins to boil; test it with a cold spoon, and when it “threads” by holding the spoon high and letting the syrup fall back very slowly into the sauce-pan, take it from the fire; add the beaten white of 1 egg to the hot syrup, and beat 5 minutes. Add flavoring. Spread on the cake while warm.

Coffee Icing is made by stirring confectioner’s sugar into strong coffee set on the stove till it is heated; put it on the cake while warm.

Orange Icing.—Squeeze the juice of an orange over the grated rind, and let it stand an hour; then strain the juice; add to it a coffee-cup of confectioner’s sugar and the yolk of an egg, then beat until stiff enough to spread on the cake.

Icing Cookies, Etc.—Before putting in the oven, dredge or sprinkle *sugar-gingerbread, cookies, and other small cakes* not to be frosted, with fine sugar, and it will give a rich brown glaze, and add much to their flavor.

ORNAMENTAL ICING.

Many people imagine that it requires a great deal of practice and special skill to do anything of this kind, but those who have never tried it will be surprised to find what pretty effects can be produced with the simplest materials. All that is needed is a paper cone, which is easily made, and a little icing.

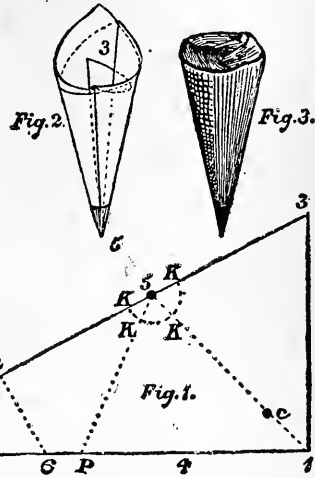
Paper cones for icing can be made as follows: Cut a sheet of rather stiff paper so as to get a triangular sheet as shown in Fig. 1, having it about 10 inches from 1 to 2, and 5 inches from 1 to 3. Divide the hypotenuse, 2, 3, into 3 equal parts at 5 and 4. Then fold over the paper to make creases in it as shown by the dotted lines from 1 to 5 and 5 to P, and also from 6 to 4. Then take the point 3 between the finger and thumb of the left hand, with the point 3 upward and the long side 1, 2, towards you, and taking the point 2 between the thumb and finger of the right hand roll the paper around the fingers of the left hand so as to form a cone, the apex of which will be at 5, and the crease 5, P, overlaps the crease 5, 1. This will leave the long point 2, 4, 6, projecting

above the cone, and it can be turned down into the center, bringing the point 2 down to the apex, and this will hold the cone in shape, as seen in Fig. 2. The point is then cut off and the icing passes out of the opening thus made. The amount cut off regulates the size of the hole, and therefore the size of the stream of icing which will come through. Little brass tubes are made for this purpose, which can be bought if desired for a few cents each. The end of the cone is cut off, and the tube dropped into the cone, projecting a little as shown by the dark end in Fig. 3. It is best to make 6 or 8 cones at a time, as the icing softens the paper, and for this reason a rather stiff paper is needed.

To use the cone it is filled about $\frac{2}{3}$ to $\frac{3}{4}$ full of icing, and the sides of the top are folded in over each other in such a way as to hold in the icing, as shown in Fig. 3. In using the cone it is grasped by the thumb and forefinger of the left hand a little ways up from the apex, while the right hand holds the top and the right thumb rests over the center or top, and forces out the icing by a slight pressure. The icing or frosting which is used is simply the white of egg beaten up with sugar as we have explained for frosting. It can be variously colored as desired. The frosting on the cake should be cold when this ornamental work is applied. This sort of decoration is termed *pipng*.

If the icing gets too thin, add more sugar; if too thick, add a little more beaten egg; it can be kept from drying while being used by laying a wet cloth over the bowl containing it.

Pipng or ornamental frosting admits of endlessly varied designs and effects. It is best to begin with some simple design. It can be drawn on paper, a piece of glass laid over it, and then let the nozzle of the cone trace the design while the icing is steadily pressed out by the thumb at the top. Then the glass can be cleaned off and another trial made. In this way very rapid progress can be made, and any one can speedily learn to ornament their own cakes, while those with special aptitude can devise very attractive designs. A simple figure for a border is shown in Fig. 4, while Fig.



PAPER CONE FOR PIPING OR ORNAMENTAL ICING.



Fig. 4.



Fig. 5.

5 shows another design, in which the dots might be put on with pink icing to make a contrast. We give other designs suitable for practice. The best taste, however, does not favor an excessive use of colors. Plain white, and the milder colors judiciously used to produce some contrasts, will result in the most pleasing effects. Ladies will be surprised at the ease with which the work is done and the advance they make in learning. Cakes can be thus decorated so as to produce very pretty effects which will be pleasing and gratifying to guests. Patterns as pretty as any they can embroider can be made much more quickly with a paper cone.

A well-decorated cake makes a pretty addition to a well-ornamented table.

Crystallization, which is sometimes used, is merely putting on, while the icing is moist, crushed rock candy

or granulated sugar, white or colored (see "Colors for Frosting"). Special designs can be applied by letting the frosting dry, then marking out the design with white of egg or gum water; then sprinkle on the white or colored sugar or candy, and shake off all that does not adhere.

Jelly can be used for piping in just the same manner as frosting. Warm it so that it will pass easily through the cone; beating it to a uniform consistency with a spoon often helps it, especially in cold weather.

Butter or lard can also be used in the same way. Have it soft enough to pass easily through the cone with gentle pressure, but not too soft. In hot weather it can be stiffened with a little flour, but do not get it too stiff.

Ornamenting Other Articles.—Piping is used for decorating many other things besides cakes, but the method is the same for all. For *pastry* or *puddings* the frosting made of white of egg and sugar is used, while butter, lard or jelly, are used for *ham*, *tongue* or *roast fowl*.



Fig. 6.

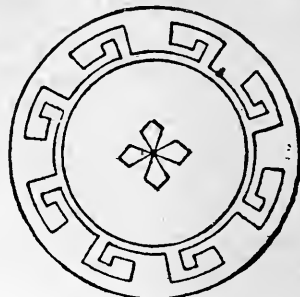


Fig. 7.

SMALL CAKES.

For cookies, snaps, jumbles, etc., a quick oven is the best. They are all best kept in a tin box. If they get moist by keeping, dry them out in the oven. For icing cookies, etc., see our article on "Frosting and Icing." Some people sprinkle cookies with sugar, after being rolled out, then cut them out, press a raisin in the center, and bake.

ALMOND DROPS.

1½ cups sugar.
3 eggs.

1 cup butter.
Flour to roll and drop.

1 cup almonds, blanched.

ANISE DROPS.

2 cups granulated sugar.

3 eggs.

3 cups flour.

1 teaspoon anise seed.

Beat the sugar and eggs well for ½ hour; then add the other ingredients; drop on buttered pans and bake in a moderate oven. The secret lies in beating rapidly and thoroughly. Each teaspoon is dropped separately so as to make separate cakes.

GINGER DROPS.

$\frac{1}{2}$ cup butter.
2 eggs.

1 cup sugar.
1 teaspoon ground ginger.

$\frac{1}{2}$ cup molasses.
2 teaspoons baking powder.

Beat all well together, adding flour till stiff enough to drop from the spoon in drops the size of an egg. Bake on tins in a moderate oven.

GINGER DROPS NO. 2.

2 eggs (well beaten).

1 cup brown sugar.

2 teaspoons ginger.

$\frac{1}{2}$ cup molasses.

1 teaspoon soda.

1 tablespoon vinegar.

Flavor with lemon or vanilla.

Roll out thin, and cut with a small cutter and bake in a quick oven.

GINGER NUTS (Without Eggs).

1 cup molasses.

$\frac{1}{2}$ cup brown sugar.

$\frac{1}{4}$ cup lard.

1 teaspoon ginger.

$\frac{1}{2}$ cup sour milk, or buttermilk.

1 teaspoon soda.

Mix very soft, form into round balls like nuts, and bake in a rather quick oven.

COOKIES.

$1\frac{1}{2}$ cups white sugar.
1 cup sour milk.

$\frac{1}{2}$ cup lard.
1 teaspoon of soda.

$\frac{1}{2}$ cup butter.
Flour sufficient to make dough.

Season with caraway seed or nutmeg to suit the taste. Mix thoroughly; roll very thin; bake quickly.

BOSTON TEA COOKIES.

1 teacup butter.

3 teacups sugar.

3 eggs.

$\frac{1}{2}$ cup sour milk.

$\frac{1}{2}$ teaspoon soda.

Spice to taste.

Flour enough to roll out rather stiff.

CINNAMON COOKIES.

1 cup butter (heaped).

2 cups brown sugar (heaped).

3 eggs.

Flour to roll out; cut in small cakes, and sprinkle on cinnamon and sugar just before baking.

COCOANUT COOKIES.

1 cup sugar.

$\frac{1}{2}$ cup butter.

1 egg.

$\frac{1}{2}$ teaspoon soda in a little water.

$\frac{1}{2}$ cocoanut (grated).

Flour enough to roll.

CREAM COOKIES (Extra).

$1\frac{1}{2}$ cups sugar.

1 cup thin sweet cream.

$1\frac{1}{2}$ cups butter.

1 egg.

3 teaspoons baking powder.

Flour to roll soft.

Sprinkle with sugar and cut.

CREAM COOKIES NO. 2.

1 cup thick sour cream.

$\frac{1}{2}$ teaspoon soda.

Flavor with lemon.

1 cup sugar.

A pinch of salt.

Mix with flour enough to roll; after they are rolled sprinkle with granulated sugar and just pass the rolling-pin over again so it will not dust off.

GINGER COOKIES.

1 cup sugar.

$\frac{3}{4}$ cup warm water.

A pinch of salt.

$\frac{3}{4}$ cup butter.

2 teaspoons soda.

Mix rather soft.

1 cup molasses.

2 heaping teaspoons ginger.

HERMIT COOKIES.

$\frac{1}{2}$ cup butter.

1 teaspoon each cinnamon,

$\frac{1}{2}$ teaspoon soda

$1\frac{1}{4}$ cups sugar.

cloves and nutmeg.

dissolved in

3 eggs.

Flour to roll soft.

4 tablespoons water.

MOLASSES COOKIES (Without eggs).

1 cup New Orleans molasses.

$\frac{1}{2}$ cup melted butter.

$\frac{1}{2}$ teaspoon soda dissolved in

Add cinnamon, cloves and nutmegs, or other spices to taste.

2 tablespoons cold water (not more).

Use flour to make stiff enough so that it will just drop off from the spoon. They are nice eaten warm.

Molasses Cookies No. 2.—Beat together 1 cup molasses, 1 cup sugar and 1 egg; add $\frac{3}{4}$ cup of melted lard in which is 1 teaspoon of salt; add 1 teaspoon of soda dissolved in warm water, and 1 teaspoon each of cinnamon, cloves and ginger; when all are mixed add 1 tablespoon of vinegar, and as much flour as can be mixed in. Roll out thin, and bake in a quick oven.

HICKORY-NUT COOKIES.

1½ cups sugar.
¼ cup butter.
4 tablespoons milk.

3 eggs (well beaten).
1 teaspoon baking powder.
Flour enough to roll thin.

1 cup hickory-nut meats,
chopped rather fine.
Bake in a quick oven.

ORANGE COOKIES.

1 cup sugar.
Flour to roll out.

¾ cup butter.
1 heaping teaspoon baking powder.

3 eggs.
Grated rind of 2 or 3 oranges.

ROCKFORD COOKIES.

1 cup white sugar.
2 tablespoons sweet milk.
Bake quickly.

½ cup butter.
2 teaspoons baking powder.

1 egg.
Add flour enough to roll out.

VANILLA COOKIES.

¼ cup butter.
¼ teaspoon soda.
Sprinkle on sugar as you roll them out.

2 cups sugar.
Flour enough to roll soft.
1 teaspoon cream of tartar.

1 cup milk.
1 teaspoon vanilla.

PATTY CAKES.

½ cup sugar.
2 teaspoons baking powder.

2 eggs.
1 teaspoon vanilla.

1 cup milk or water.

Make a soft sponge and bake quickly in patty-pans.

JUMBLES.

1 cup sugar.
1 teaspoon baking powder.

½ cup butter.
Flour to roll out.

½ cup milk.
Bake in a quick oven.

COCOANUT JUMBLES.

1½ cups pulverized sugar (heaped).
5 eggs.

1 cup butter (scant).
1 lb. grated cocoanut.

1 cup flour (heaped).
Drop on tins with tablespoon.

HICKORY-NUT JUMBLES.

1 cup sugar.
1 tablespoon of water.

1 egg.
1 cup hickory-nut kernels.

1 cup flour.

Stir all well together, drop on greased pans with a tablespoon, and bake in a hot oven.

DROP CAKE.

4 eggs.
Flour enough for thin batter.

2 cups milk.
Bake in cups.

A little salt.

GINGER BISCUITS.

1 cup butter.
½ cup sweet milk.

2 cups sugar.
1 teaspoon baking powder.

2 eggs.

1 teaspoon ground ginger.

Beat the butter and sugar together; add the eggs, and beat again; then add the milk. Have the baking powder and ginger well mixed in a coffee-cup of flour. Add this and more flour to make a stiff dough. Cut out like cookies, and bake.

GINGER SNAPS.

1 cup sugar.
1 tablespoon ginger.

1 cup molasses.
1 teaspoon saleratus dissolved in
2 or 3 tablespoons of water.

1 cup lard.
Salt to taste.

Stir in flour until the dough can be made into marbles between the palms. Flatten and place in tins far enough apart not to touch each other in rising, and bake moderately. These snaps will keep weeks if kept dry; if they become damp, they can be dried out and baked again.

GINGER SNAPS NO. 2.

2 eggs.
2 tablespoons ginger.

2 cups New Orleans molasses.
2 teaspoons soda.

1 cup butter.

GINGER SNAPS (Without Eggs).

2 cups molasses.
1 teaspoon soda.

1 cup sugar.
½ cup lard.

½ cup water.
½ cup butter.

SUGAR GINGER SNAPS.

1 cup sugar.
½ cup of water (scant).
Flour enough to roll.

3 tablespoons of butter.
2 teaspoons of ginger.

4 tablespoons of lard.
½ teaspoon soda dissolved
in warm water.

Warm the shortening and sugar and stir in the water and ginger; then the soda, and add the flour last. Roll out very thin and bake in a quick oven.

FRUIT SNAPS.

1½ cups sugar. 1 cup butter. ½ cup molasses.
 3 eggs. 1 teaspoon soda. 1 cup each raisins and currants.
 1 teaspoon each of ginger, cloves, cinnamon and allspice.

Flour to roll out as soft as can be cut. These will keep several months.

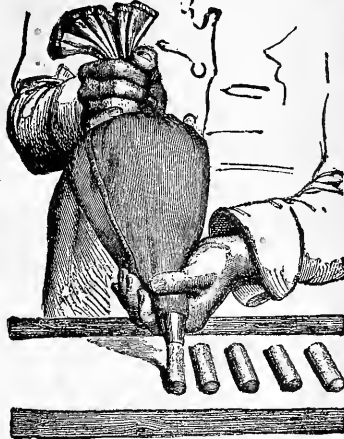
LEMON SNAPS.

¾ cup butter. 1 cup sugar. 2 eggs. 4 tablespoons hot water.
 1 teaspoon soda. Lemon flavor. Flour to roll soft. Bake in a quick oven.

LADY FINGERS.

Take the yolks of 5 eggs, beaten light, 1 cup white sugar, 1 teaspoon baking powder, flour to roll thin; flavor to taste. Cut in strips the size of a finger. Do not let them touch in the pan. Bake in a quick oven, watching them, as they readily scorch.

No. 2.—Another recipe is to take the yolks of 3 eggs, beat light, add ½ cup powdered sugar and beat again; add 2 heaping tablespoons of flour, mix well, and add the well-beaten whites of the 3 eggs. Squeeze them out of a paper cone, or bag (as shown in our illustration), dust on sugar, and bake till light brown in a moderate oven.



FORMING LADY FINGERS.

MACAROONS.

Almond Macaroons.—Take 1 lb. almonds, blanch them, and pound to a paste with a little rose water or oil of lemon; add 1 lb. of white sugar, and the well-beaten whites of 4 eggs. Bake in drops, or small cakes, on buttered tins in a slow oven to a light brown. Some glaze them with beaten yolk of egg, and others dust on sugar before baking them. Keep in tightly closed tin boxes or glass jars.

Filbert Macaroons may be made by using equal parts of filberts and almonds.

For Coconut Macaroons, use 1 cup powdered sugar and 1 cup grated coconut; work in enough of the coconut milk to form a plain paste; mold and bake as above directed.

Hickory-Nut Macaroons.—Beat the whites of 3 eggs, 1 cup granulated sugar, and 1 cup powdered sugar, till very light; stir in 1 cup chopped hickory-nuts, and bake like almond macaroons.

KISSES.

Take the well-beaten whites of 3 eggs, add 5 tablespoons of powdered sugar, and flavor with lemon juice; drop on buttered paper with a spoon, sift sugar over them and bake 30 minutes in a slow oven.

For Chocolate Kisses pound together 2 oz. chocolate and 2 cups white sugar; sift it, mix it with the well-beaten white of egg, and finish as above.

MAPLE SUGAR CAKES.

Rub a piece of butter the size of an egg into 2 cups of flour, then add an even teaspoon of salt, well pulverized; again add a heaping teaspoon of home-made baking powder; stir all together thoroughly. Have on hand a cup of maple sugar coarsely sliced from the cake. (Place the cake of sugar on a tin and put in the hot oven until it is soft enough to cut.) Have the oven hot and a baking-tin well buttered; add a teacup of sweet milk to the flour and stir quickly. If the dough is not thick enough add a trifle more of flour; put in the sugar and stir again.

Roll out and cut with the biscuit cutter; place on the tin and put in the oven. The oven should be hot enough to bake them brown in 10 minutes.

PUFFS.

1 cup milk.	2 eggs (well beaten).	1 tablespoon flour.
2 rounded tablespoons butter.	4 heaping tablespoons sugar.	Grated rind of 1 lemon.

Mix the milk and beaten eggs; slowly add the flour, butter, sugar and flavor and mix well. Bake 20 minutes in a quick oven in buttered saucers.

ROLY POLY CAKE.

1 teacup sugar.	1 teacup flour.	2 tablespoons milk.
3 eggs (beaten separate).	1 teaspoon soda.	2 teaspoons cream tartar.

Spread thinly in a long pan, and bake in a quick oven. When done, cover with jam while hot (raspberry jam is best) and roll up; cut in slices when cold.

SHREWSBERRY CAKES.

1 heaping cup butter (creamed).	1 scant cup granulated sugar.	1 egg (beaten).
2 cups flour.	$\frac{1}{2}$ oz. caraway seeds.	

Roll very thin and cut into small cakes; prick them, and bake in tins or shallow pans in a moderate oven.

SAVOY BISCUITS.

Break 5 eggs into a pan and add a coffee-cup of granulated sugar; beat together until it is thick, then beat in gradually a coffee-cup of dry sifted flour. Place the dough in teaspoonfuls on buttered paper in a dripping-pan, and bake a light brown. When cold, brush the under sides of the biscuits with the beaten white of an egg, and press 2 together.

TRIFLES.

2 cups butter (heaped).	2 cups sugar (heaped).	4 cups flour (heaped).
1 cup sweet milk.		

Cream the butter and sugar, sift in the flour, add the milk, turn the dough on to a bread-board and work well; roll out in as thin sheets as possible, cut in small round cakes, and bake in a very moderate oven.

TURTLE CAKES.

These always please the children. Have the turtles all made the day beforehand, and ready on a plate. Take large raisins and flatten them; insert at one end a whole clove, with the head sticking out for the head of the turtle; at the other end insert the stem of a clove with the smaller end out for the turtle's tail; on each side insert two cloves with the heads picked out leaving the spurs on for the claws of the turtles. Make nice round cookies, spread a thick frosting on one side, and place a turtle on the frosting to dry.

TWILBACK.

1 coffee-cup granulated sugar.	5 eggs.	1 teaspoon salt.
4 coffee-cups of flour.		

Knead these well together until stiff, then roll the dough out flat about 3 fingers wide. Brush the dough over with the white of an egg, place in a moderate oven and bake for $\frac{1}{2}$ hour; then take it out and cut while hot into thin pieces with a sharp knife. Strew these with sugar and place them again in the oven, until both sides are a light brown color. A good German cake to eat with coffee at breakfast.

DESSERTS.

Under this head may be found recipes for making many delicate dishes with corn-starch, eggs, gelatine, etc., which can be prepared in the morning, or the day before they are to be used, and, in warm weather, served cold as a dessert.

Fresh new milk should be used whenever a recipe calls for milk, but condensed milk can be used if fresh milk is not to be obtained. If cream is used it should be sweet, and as fresh as possible—the cream from “separators” and creamers is the safest to use. Thin cream with milk mixed in it will not whip to a froth. The colder it is the better it whips—in warm weather it is apt to turn to butter. If cream is slightly turned a *very little* cooking soda dissolved in a little cold water may be mixed with it without injuring the flavor. The soda (alkali) counteracts the lactic acid developed in souring. Milk should be scalded in a double boiler made for the purpose; or use a tin pail set in a kettle of boiling water which answers very well, and is not likely to be melted to pieces by a careless servant.

So many warnings against using bad eggs have already been given that we need not repeat them here. Beat eggs in stone or earthenware and not in tin, as explained for cakes. It is an improvement to strain yolks through a small wire strainer after beating them. The yolks alone, or the whole egg, can be used for floats and boiled custards. To add the eggs so that they will not curdle there are several ways. One way is to heat the milk till a slight foam appears on top, then put in the sugar, which cools it so that the eggs can be added without curdling. One tablespoon of sugar for each egg is the uniform rule for custards.

Ducks' eggs, when obtainable, add much to the richness and flavor of custards. Less are required than of the ordinary eggs. Four ducks' eggs to a pint of milk makes a delicious custard.

Custards may be made with cream or milk, and with eggs varying in number. A very plain custard can be made with 1 egg to a pint of milk and a good one with 3 eggs, but if it is wanted very rich 4 or even 5 eggs can be used. The richer the custard the more likely it is to curdle. If it does curdle, take an egg-beater and thoroughly beat a bowl full at once and it can be saved, although many cooks do not know this. Floating Island can be saved the same way. For boiled custards the yolks give a smoother consistency than the whites. Boiled custards require constant attention from beginning to end; do not let them boil too long, but take them from the stove as soon as they are done and they will thicken in cooling; do not leave them in the hot dish, or they will curdle, but pour them into cold molds, or set the vessel containing them in cold water. Custard ought to be thin enough to pour if it is to serve as a sauce, and should then be taken off an instant sooner.

If the yolks only are used in the custard the whites may be utilized in various ways. They can be beaten up, sweetened and flavored and put on top, as in “Floating Island;” or after beating, they may be poached by dipping a spoonful at a time into boiling water or milk, and then spread on top of the custard, either dotted with bits of jelly or not, as preferred. The beaten whites can also be colored by beating in any bright colored jelly, using 1 tablespoon of jelly to the white of each egg.

In baking custards bake them slowly with moderate heat; if there is too much heat they will partly turn to whey. They are done when firm in the center.

See what we say about the action of heat on flavoring extracts in our introduction to “Cake.” The flavoring is best added after the dish is taken from the stove.

Rennet.—Get the butcher to prepare the stomach of a calf for you, salt it well, and spread out to dry; when about half dry, shake the loose salt off and cut it into strips; then take a quart bottle, put in the strips, and fill with currant, Muscatine, or any other sweet wine; let stand 12 or 15 days, and it can be used. It is superior to the liquid rennet sold in the stores, and will keep 12 months, or more.

BLANC MANGE.

Blanc Mange means literally "white food" or jelly, but in many recipes fruit or other coloring is now added to such desserts to improve the appearance and give variety. *Blanc Mange* is made of many materials, like corn-starch, arrow-root, sago, tapioca, gelatine, etc. It may be garnished with bright colored jelly if desired, and eaten with whipped cream, cream and sugar, boiled custard, preserves, fruit juices, jellies or sauces.

Arrow-root and several other blanc manges are given in our "Invalid Cookery" (which see).

Almond Blanc Mange.—Take 4 cups milk, 4 tablespoons of corn-starch and 4 tablespoons of sugar; boil all together until thick, and add 30 almonds, blanched and split.

Corn-Starch Blanc Mange is made the same way, but do not cook quite as long. It can also be made by using 1 tablespoon less of corn-starch, and adding 2 well-beaten eggs, which makes it richer.

Farina Blanc Mange.—Mix 5 tablespoons of farina in a little cold water, add a pinch of salt, and stir it into 1 quart of boiling milk; boil 10 to 15 minutes, and turn into a wet mold.

Fruit Blanc Mange.—Stew the fresh fruit, strain off the juice and sweeten to taste. Put it in a double kettle and let it boil. While it is boiling, stir in corn-starch wet with a little cold water, in the proportion of 2 tablespoons of corn-starch to 1 pint of juice; stir it until it is cooked; then pour in molds wet in cold water, and set them away to cool. They may be cooled quickly by setting the cups in a pan of cold water and changing the water as it becomes warm. Eaten with cream and sugar, this is a delightful dessert. If cream is scarce, a rather thin boiled custard makes a nice accompaniment.

Cherries or red raspberries are nicest, but other fruit may be used. Currant juice combined with raspberries is fine; strawberries are good, and a circle of fresh strawberries around the mold makes a good garnish.

Irish Moss Blanc Mange.—Wash 1 cup moss in soda water to remove the saline taste, and rinse in several waters; steep it in 1 quart of milk till that is thickened; strain through a fine sieve, and sweeten and flavor to taste. Wet the mold in cold water and pour in the blanc mange. Serve with sugar and cream, eating it the day it is made. It is an addition to give a little preserved ginger with each plate. This is good for invalids without the ginger.

Rice Blanc Mange.—Use $\frac{1}{4}$ pound ground rice, 1 quart milk, 3 ounces loaf sugar, 1 ounce fresh butter. Mix the rice to a smooth batter, with about $\frac{1}{2}$ pint of the milk; then the remainder into a sauce-pan with sugar, butter, and a small pinch of salt; bring to the boiling point; then stir in the rice and let it boil 10 minutes. After taking from the fire add any flavoring desired. Grease the mold with salad oil, and when perfectly set it should turn out easily. Garnish with jam, or pour around a compote of any kind of fruit just before sending to the table. It is best made the day before it is wanted. A *nice flavoring* is made by steeping 3 laurel leaves in the milk and taking them out before the rice is added.

Variegated Blanc Mange.—Make 2 blanc manges—1 white, of corn-starch, and 1 colored, of fruit; pour a little of each of these alternately into a mold, thus forming different colored layers, letting each layer set before pouring on the next.

CUSTARDS.

Plain Custard.—Take the yolks of 3 eggs, 1 teaspoon corn-starch, 1 cup sugar, beaten together. Add 2 cups boiling milk and let it cook a few minutes; then add a small piece of butter, flavor with vanilla and set on ice.

Custard No. 2.—Take perfectly fresh eggs, 4 if large, or 5 if small; stir them into 1 quart of nice sweet milk, sweeten to taste, flavor with a teaspoon of peach water, or extract of vanilla or lemon, and put in a pinch of salt. Rub a very little butter on the sides and bottom of the baking-dish. Pour in the custard, grate a little nutmeg over the top, and bake in a quick oven; $\frac{3}{4}$ hour is generally long enough.

Almond Custards.—Make a boiled custard with 1 pint of milk, the yolks of 4 eggs, 4 tablespoons of sugar, and 1 saltspoon of salt. When cold, add $\frac{1}{2}$ cup of finely chopped almonds and 1 teaspoon of vanilla. Serve in glasses with whipped cream sprinkled with finely-shredded almonds.

Apple Custard.—Take 1 pint stewed apples, sweetened and cooled; 1 pint sweet milk, 4 eggs, well beaten. Mix the apple, milk and eggs, put in the baking-dish, grate a little nutmeg over the top, and bake $\frac{1}{2}$ hour.

Arrow-root Custard.—Two cups of boiling milk, 3 heaping teaspoons arrow-root wet with a little cold milk, 2 tablespoons of sugar beaten with 1 egg. Mix the paste with the boiling milk, stirring briskly; take from the fire, stir in the egg and sugar, and then boil 2 minutes; flavor to taste and add a pinch of salt. This is very light and delicate, and suitable for invalids.

Banana Custard.—Make a plain boiled custard, and when cool, pour it over bananas cut in thin slices.

Fruit Custards.—Make the same as banana custard, using any kind of fruit desired, either fresh or canned.

Bengal Custard.—Take 1 quart of milk, 3 tablespoons of rice flour, 3 well-beaten eggs, 3 tablespoons of sugar, or more if liked. Scald the milk in a double boiler, beat the eggs, rice flour, and sugar together, and flavor with nutmeg or vanilla. Bake or steam in custard-cups. If baked, place the cups in a dripping-pan of hot water and the cups will not be discolored.

Boiled Custard.—Beat the yolks of 5 eggs and $\frac{1}{2}$ cup of sugar together, then stir them into a quart of milk. Put these in a custard-boiler, add a pinch of salt, place the boiler in a kettle of water and boil until it becomes thick.

Soft Caramel Custard.—Take 1 quart of milk, $\frac{1}{2}$ cup of sugar, 6 eggs, $\frac{1}{2}$ teaspoon of salt. Put the milk on to boil, reserving a cupful. Beat the eggs and add the cold milk to them. Stir the sugar in a small frying-pan until it becomes liquid and just begins to smoke. Stir it into the boiling milk; then add the beaten eggs and cold milk and stir constantly until the mixture begins to thicken. Set away to cool. Serve in glasses.

Chocolate Custard.—Use $\frac{1}{4}$ lb. Baker's prepared cocoa to 1 quart milk. Mix the milk and scraped chocolate to a thick paste. Boil 15 minutes; while warm stir in 3 tablespoons sugar, and set it away to cool. Beat 8 eggs well, and stir into this mixture. Bake in cups. It may be served with a macaroon on top of each.

Cocoanut Custard.—One quart milk, yolks of 4 eggs, 6 tablespoons of sugar, 2 tablespoons corn-starch and 1 teaspoon vanilla flavoring. Put milk, sugar and eggs on the stove in a kettle of hot water, or use a double boiler; when the milk begins to simmer add the corn-starch dissolved in a little cold milk; boil 3 minutes. When cool add the flavoring and cover the top with grated cocoanut.

Custard Float.—Put 4 large tablespoons of chocolate in 1 quart of milk, dissolve it well, and heat it in a double boiler; add the well-beaten yolks of 4 eggs, $\frac{1}{2}$ cup of sugar, 1 tablespoon of corn-starch, and 1 teaspoon of vanilla; boil about as long as corn-starch custard, and then put on ice to cool. When ready to serve

pour into a glass dish, and put the well-beaten whites of the 4 eggs on top. It will be relished by those who like chocolate.

Lemon Custard.—Take 1 pint of fresh milk, 1 lemon, $\frac{1}{2}$ cup sugar, yolks of 4 eggs. Put the milk to scald in the double boiler, add the grated rind and strained juice of the lemon to the sugar; beat the yolks of eggs stiff, then mix with the sugar and lemon, and stir it into the milk when scalding hot; take it from the fire immediately as it must not boil. When it has cooled a little fill it into the custard-cups. The white of 1 egg and 2 tablespoons of sugar may be made into frosting and a portion placed on each custard.

Rennet Custard.—Heat 1 quart of milk until it is lukewarm; add 2 tablespoons of rennet (see our recipe for preparing it, although it can be bought at the stores), 2 tablespoons of lemon juice, and 4 tablespoons of sugar; stir the ingredients gently together; as soon as they are mixed pour the custard immediately into the bowl in which it is to be served. Set it on the ice as soon as it is cool, and serve it for dessert, with preserves or cream and sugar. It will be firm in about 2 hours, and should be served soon after.

Ost Kaka (of Sweden).—This is rennet custard served with cinnamon and cream.

Custard Souffle.—Use 2 cups milk, 2 tablespoons butter, $\frac{1}{2}$ cup sugar, 4 eggs, 2 teaspoons of flour, 1 teaspoon of vanilla. Scald the milk in a double boiler, and when hot add the yolks of the eggs well beaten with the sugar and flour; take from the fire as soon as it begins to thicken, and stir in the butter; beat the whites of the eggs to a stiff froth, and cut it into the custard lightly, and bake $\frac{1}{2}$ hour in a slow oven. Serve as soon as taken from the oven.

Steamed Custard.—Take 5 eggs (throw out the yolks of 2, and beat), 3 tablespoons of sugar, a pinch of salt, a chip or two of lemon or orange, and a little vanilla. Scald 1 quart of milk, take off the scum, and pour it on the beaten eggs. Set it to steaming in a close covered vessel, and steam 5 or 6 minutes; then set on ice.

Tapioca Custard.—Take 1 quart of fresh milk, 2 eggs, $\frac{1}{2}$ cup of pearl tapioca, $\frac{1}{2}$ cup of white sugar. Soak the tapioca over night, and the next morning drain off all the water while the milk is scalding in a double boiler; when the milk is hot, add the tapioca and let it simmer 10 minutes; beat the sugar and eggs together, and add to the milk and tapioca; flavor with cinnamon, vanilla or nutmeg.

Tomato Custard.—Peel and stew until thoroughly cooked 1 quart of ripe tomatoes; strain through a sieve to remove the seeds; beat 3 fresh eggs very light and add them to the strained tomatoes with a teacup of white sugar, a pinch of salt, butter the size of an egg, and a little nutmeg. Bake in a quick oven 15 or 20 minutes. This is nice served hot or cold.

White Custard.—Boil 2 pints of new milk with some cinnamon and a few bitter almonds; beat to a paste with rose-water, a few sweet almonds, and add to the custard. Thicken it to the taste with a little flour or arrow-root previously rubbed down with water or milk; sweeten and flavor to taste.

Various Custards.—Those without experience should adhere closely to the recipes given, but cooks with a little experience can produce a variety of custards by varying the flavors used, leaving the body of the custard the same. Oranges cut fine (after being peeled and seeded) can be used; so can canned or candied fruits, chopped almonds, grated cocoanut, chocolate, caramels, macaroons, etc., thus making various custards. An ingenious cook can devise many changes, and make attractive dishes, and we advise experienced cooks to try it.

CREAMS, FLOATS, ETC.

Chocolate Creams.—Take 3 pints fresh milk, and add 2 ounces grated chocolate, and $\frac{1}{2}$ cup white sugar; mix and bring to a boil; gradually add the beaten yolks of 3 eggs, slowly stirring it one way; add vanilla boiled in milk to flavor; when thoroughly mixed put into cups, place in water, and boil 1 hour. Serve when cold.

Coffee Cream.—Mix $\frac{1}{2}$ cup sugar, $\frac{1}{2}$ cup strong coffee and 1 pint rich cream; whip till it is all froth; put in stem glasses, freeze, and serve in the same glasses.

Hamburg Cream.—Grate the rind and squeeze the juice of 1 lemon into $1\frac{1}{2}$ cups sugar; beat the yolks of 5 eggs, put into a pan, add the sugar, and set in hot water, stirring all the time; when the eggs begin to cook, add the 5 whites, which should be beaten and ready; then remove and let cool.

Mock Cream.—Take 1 quart of new milk, 1 fresh egg, 1 teaspoon of corn-starch, 1 teaspoon of white sugar. Scald the milk in a double boiler, or tin pail set in a kettle of boiling water. Beat the starch, sugar and egg thoroughly, and stir into the milk when it is scalding hot. Let it get thoroughly cold before serving.

Pink Cream.—Use 3 gills raspberry syrup mixed with $\frac{1}{4}$ pound of sugar and 1 pint of thick, sweet cream. Whisk until very light, and serve in whip glasses.

Rice Cream.—Boil 1 cup rice till tender, in new milk; add white sugar to whiten, pile on a dish, and spread slices of currant jelly or preserved fruit on top of it. Then take the well-beaten whites of 5 eggs, sweetened with powdered sugar, and add 1 tablespoon of rich cream and flavor with vanilla; spread this on top like snow.

Tapioca Cream.—Soak 3 tablespoons of tapioca over night; boil it next day in 1 quart sweet milk; then stir in beaten yolks of 3 eggs and 1 cup sugar; boil all 10 minutes. Beat the 3 whites with 3 teaspoons of sugar; flavor with vanilla, and stir into the other when nearly cold.

Tapioca Nut Cream.—Soak $\frac{1}{2}$ pound of pearl tapioca over night in $1\frac{1}{2}$ cups of cold water. Cover with 3 cups of cold water and cook in a double boiler until transparent, then add $\frac{1}{2}$ cup of sugar, and the juice and grated rind of a lemon; turn into small molds. Chill and turn into a glass dish garnished with apricots and whipped cream, sweetened and flavored with chopped walnuts and vanilla.

Thickened Cream.—Stir together $\frac{1}{2}$ cup of rich milk, $\frac{1}{2}$ cup white sugar, and 1 wine-glass of rose-water; add the beaten yolks of 2 eggs, and stir all into 1 quart of rich cream; set it over hot coals, let it just come to a boil stirring all the time; then take off, pour into a glass bowl, and set away to cool. Eat with any berries, like strawberries, or raspberries, or with sweetmeats.

Whipped Cream.—Thoroughly whip 1 teacup of ice-cold sweet cream; then beat the whites of 3 eggs; add 3 tablespoons of powdered sugar and the whipped cream and stir lightly together. Nice with fruit puddings, or to cover slices of sponge cake.

Whipped Cream No. 2.—1 cup thick, sweet cold cream, and 3 teaspoons pulverized sugar; beat to a stiff froth, and add $\frac{1}{2}$ teaspoon lemon or vanilla.

Apple Float.—Bake 3 apples (with no water around them); when done, scrape the pulp all out, thoroughly mix in 1 cup sugar and let it cool. Then add the well-beaten white of 1 egg, and beat all together 30 minutes. Form it into shape and pour around it a custard made of 1 quart of milk, 1 teaspoon corn-starch, yolks of 3 eggs, sugar to sweeten, and lemon or vanilla flavor.

Apple Kuchen.—Make a pie-crust a trifle richer than biscuit, roll out and place

it in the bottom of the pan in which meat is roasted. Peel cooking apples, slice them into eighths, and place them across the pan, close together in even rows, leaving a small space between the rows, and pressing the inner edge of the apple slightly into the crust; sprinkle "A" sugar over the apple, and a little nutmeg; bake in the oven until the apples are cooked. This will make a simple and attractive dessert.

Bird's Nest.—Take 6 apples, peel, sweeten and bake, and then cover with a custard made of 2 tablespoons sugar, 3 yolks of eggs, 3 cups milk, and 1 teaspoon of vanilla; bake till firm.

Cheap Dessert.—Put a square cracker in a saucer, pour just enough boiling water on it to soften it; put a teaspoon of jelly in the center, sprinkle sugar over, and pour sweet cream over all. Very nice also for invalids.

Charlotte Russe.—Beat the whites of 7 eggs to a stiff froth; whip 1 pint of cream and add it; add sugar and flavor to taste; pour it over sliced cake. Set in a cool place after making.

Economical Dessert.—Soak 1 teacup rice; when done to a jelly add 1 teaspoon of currant jelly and $\frac{1}{2}$ teacup of fruit juice; boil a few minutes; put in molds, and eat with cream and sugar.

Floating Island.—Beat well the yolks of 4 eggs, add 5 tablespoons of sugar, and stir it into 1 quart of sweet milk; when cool, flavor and pour into a dish. Heap upon it the 5 well-beaten whites, to which a little sugar is added, and $\frac{1}{2}$ cup jelly. Dot with bits of jelly.

French Jellies.—Let a layer of melted jelly cool in the bottom of a mold; then add a layer of any kind of fresh fruit, or soft dried fruit; then add another layer of jelly, and so on until the mold is filled.

Orange Float.—Take 4 cups water, the juice and pulp of 2 lemons, and 1 cup of sugar; bring to a boil, and add 4 tablespoons of corn-starch mixed in water; stir it 15 minutes and when cool pour it over 5 sliced oranges. Over the top spread the whites of 3 eggs sweetened, and a few drops of vanilla. Eat with cream.

Layer Pudding (*Brown Layer*).—Take 2 cups milk, $\frac{1}{2}$ cup sugar, 2 tablespoons scraped chocolate, and 2 rounded tablespoons of corn-starch; moisten the starch in a small portion of the milk, and place the remainder in a double boiler with the chocolate until it is scalding hot; then add the corn-starch and sugar and stir it constantly until it thickens; then put it in a buttered pudding dish or mold to cool.

Yellow Layer.—Take 2 cups milk, $\frac{1}{2}$ cup sugar, yolks of 2 eggs, 2 tablespoons of corn-starch and $\frac{1}{2}$ teaspoon of extract of vanilla; scald the milk as above, saving a portion to moisten the corn-starch; when the milk is hot add the egg yolks, corn-starch and sugar, and stir until thick; take from the fire, add the vanilla, and put this in the mold to cool, over the brown layer of pudding.

Pink Layer.—Take 2 cups milk, $\frac{1}{2}$ cup sugar, 2 tablespoons corn-starch dissolved in berry juice, or the berries may be crushed fine and added without straining; make like the other layers, and put this layer in the mold over the yellow layer. Then beat the 2 whites of eggs to a stiff froth, with $\frac{1}{2}$ cup pulverized sugar, and place it on top.

This pudding can be made of water instead of milk, if milk is scarce, and if eggs are scarce the yellow part may be colored with a little saffron instead of the yolk of egg, and the frosting omitted. Serve with sweet cream, or any liquid pudding sauce preferred.

Kiss Pudding.—Beat the yolks of 3 eggs with $\frac{1}{2}$ cup sugar until light; add $1\frac{1}{2}$ tablespoons corn-starch wet with a little cold milk; stir in 2 cups boiling milk till thick and let cool. Beat the whites of the 3 eggs with $\frac{1}{2}$ cup sugar, spread it over the top, and brown in the oven.

Lemon Jelly and Cream.—Place a mold of vanilla cream on the dish in which it is to be sent to the table; cut another mold of lemon jelly in pieces, or break it with a spoon to a quivering mass, for a garnish. Serve a portion of each to a person; the combined flavor is delicious.

Dessert Puffs.—Take the well-beaten whites of 4 eggs, 2 cups cream, 2 cups milk, 1 cup sifted flour (heaped), 1 cup powdered sugar (scant), a little salt, and a little grated rind of lemon; beat them all together until very light; bake in gem pans, and then sift pulverized sugar over them. Eat with sauce flavored with lemon.

Fruit Puffs.—Take $\frac{1}{2}$ teacup of sugar, $\frac{1}{2}$ teacup of milk, 2 eggs, 2 teaspoons of baking powder, a saltspoon of salt, and flour to make a batter a trifle thicker than for griddle cakes; stir in a cup of seeded and chopped raisins. Butter tea-cups and fill $\frac{1}{2}$ full of batter, set the cups in a steamer, put on the cover and steam 1 hour. This quantity will make 6 cupfuls. Eat hot with orange sauce. A delicious dessert.

Quince Snow.—Take the whites of 2 eggs, $\frac{1}{2}$ cup sugar, and 5 oz. of quince marmalade; put it in a dish shaped like a pyramid, and bake it a light yellow.

Molded Snow.—Scald 3 cups of milk and mix $\frac{1}{2}$ cup of corn-starch, with 1 cup of milk, using 1 quart of milk in all. Stir the diluted corn-starch into the hot milk, adding also 2 tablespoons of sugar. Cook 15 minutes; then add the whites of 3 eggs beaten stiff and pour into a mold. Chill and serve.

Scandinavian Rogrod.—Take $1\frac{1}{2}$ quarts of water and add $1\frac{1}{2}$ quarts of any acid fruit juice, like currant, and 2 heaping cups sugar, and bring to a boil. A little stick cinnamon tied in a bag should be dropped in and later taken out, as it can be used in that way often. While boiling, stir in slowly, to keep it from lumping, 1 lb. soaked sago, or $1\frac{1}{2}$ lbs. arrow-root; then boil 15 minutes, and turn into molds or cups to cool. Serve with sugar and cream when cold. (A favorite dish in Sweden and Norway.)

Sago With Fruit.—Take 1 cup sago and soak it in half $\frac{1}{2}$ milk and water; then add 1 quart of boiling milk, stirring until it becomes thick, and let it cool. Put a layer of peaches, or any other fruit preferred, into a pudding dish, using a little sugar if needed; then put on a layer of sago; then another of fruit, and so on until the dish is full. Set it on ice; serve with sweetened cream. An appetizing dessert in warm weather.

Fruit Tapioca.—Pick over and wash $\frac{1}{2}$ cup pearl tapioca; put it in 3 cups boiling water and cook 1 hour, or till soft and transparent, stirring often; add 1 scant teaspoon of salt, $\frac{1}{2}$ cup sugar, and $\frac{1}{2}$ cup currant jelly; stir till the jelly is all dissolved, pour into a mold, and serve very cold with sugar and cream. Instead of the jelly, $\frac{1}{2}$ cup lemon juice, or any acid fruit jelly may be used; or use 1 cup canned apricot, peach or quince. In summer 2 cups of ripe berries or small fruits can be used, adding more sugar.

Turon.—Whip the whites of 4 eggs to a stiff froth; chop 7 oz. of almonds or chestnuts and sprinkle by degrees into the egg; work in sufficient sugar to make a flexible paste, stirring well the whole time. Flavor with lemon essence, and put into a mold.

Fruit Trifle.—Beat the whites of 4 eggs to a stiff froth; add 2 tablespoons of

sugar, and the same of raspberry jam and currant jelly. Eat with sponge cake, and it is delicious.

Sponge Biscuit for Dessert.—Take 2 cups flour, $1\frac{1}{2}$ cups sugar, sifted, 6 eggs, beaten separate, lemon flavor. Beat the whites, add the beaten yolks, then the lemon flavor, then the sugar; mix well and add flour last. Bake in patty-pans, with sugar sprinkled over the top to glaze. Serve with a rich liquid sauce.

GELATINE PREPARATIONS.

To prepare gelatine first soak it in a small quantity of cold water, and then add hot water to dissolve it; or it may be placed in the required amount of cold water and set on the back of the range where it will heat and dissolve gradually. About 1 to $1\frac{1}{2}$ cups of cold water to the ounce of gelatine is the right proportion. Remember that gelatine should not boil, and never needs cooking. It is a good plan to strain it, after it is dissolved, through a fine strainer. Gelatine can be used most satisfactorily in jellies, blanc manges, creams and ices. Never use more than will suffice to make a jelly strong enough to retain its form when turned out of the mold. More is needed in summer than in winter, a scant ounce being sufficient in summer for 1 pint of liquid, while a little over $\frac{1}{2}$ ounce will do in winter—this being the rule for jellies, while creams require a little less. It is best to set them on ice, when possible, as soon as they are ready. *Molds* should be buttered or oiled to facilitate taking the jellies from them; or they may be wet with cold water before filling. If jellies stick to the molds, set them for a moment in hot water, and they can be easily removed.

Gelatine is prepared from the skin and bones of animals. It requires a careful selection of materials and cleanly preparation, to obtain a wholesome product. The use of white of egg to clarify the jelly is not needed now, as was formerly the case, because the gelatine is clarified during the process of manufacture. The changes of opinion regarding the nutritive value of gelatine are interesting. In the 18th century gelatine was considered the most nourishing constituent of meat. About the middle of the 19th century the French Academy of Science made a special investigation of the subject, and as a result a complete change of opinion took place. It was shown that gelatine alone could not sustain life, a reaction occurred, and very mistakenly all food value was denied it. Further experiments, however, have put it in its right place, and it is now admitted that while it cannot sustain life alone, it has some value as food, but it must hold a subordinate place, and it is only valuable when eaten with other things which supply the elements which it lacks. It has some slight value in convalescence, although very much less than many people imagine. When pure it is tasteless and devoid of flavor.

Isinglass was formerly obtained from the swimming bladder of the sturgeon and came from Russia, but now it is obtained from many other fish and comes from South America, the East Indies, Canada, etc. The best is almost colorless, is free from fish odor, taste and smell, and dissolves freely in any warm liquid. Chemically there is little difference between isinglass and gelatine, and what we say about the nourishing properties of gelatine applies equally to isinglass. *Tests.* A little pure isinglass put into cold water swells, and becomes soft, white and opaque, while gelatine will become transparent and glass-like. In hot water isinglass dissolves with little or no residuum, while gelatine leaves a considerable deposit. In vinegar, isinglass swells into a jelly and all trace of its structure is soon destroyed, while gelatine hardens and retains its form. These are the best tests for distinguishing between them.

Jelly of Different Colors.—This can be prepared by having jelly of the desired colors prepared separately; then put a little of one in a mold, let it cool; then pour in a little of the other and let that cool, and so on, allowing each layer to set before putting in the next. Blanc Mange and jelly can be combined thus very prettily.

Almond Blanc Mange.—Put an ounce of gelatine to soak in a teacup of cold water; set on the stove where it will heat gradually and dissolve. Blanch 24 sweet almonds, and pound them in a mortar; mix with 1 pint of milk and 1 pint of cream, scald the mixture in a double boiler, or tin pail set in a kettle of boiling water; sweeten to taste, add the dissolved gelatine, stir thoroughly, and pour into a mold to set.

Bananas in Jelly.—Prepare the gelatine, sweeten it, and when cool put a layer of sliced bananas and oranges in the bottom of a prepared mold or glass dish, then pour on a little of the gelatine, let it set, and then put in another layer of

fruit, and so on alternately until the dish is full; set on ice till ready to serve. Bananas and strawberries can be used the same way. For a variety, soak the gelatine in cold water, and then dissolve it in hot lemonade; then use it with the fruit as above.

Chocolate Charlotte Russe.—Cover 1 ounce of gelatine with cold water, shave 3 ounces of Baker's prepared cocoa, and mix it with 1 pint of sweet cream and the gelatine. Put it in a porcelain kettle over a slow fire, and stir it until it boils and is well mixed. Beat the yolks of 8 eggs and whites of 4 together until very light; then stir them in the mixture, with $\frac{1}{2}$ lb. of white sugar; simmer it over the fire but do not let it boil; pour it in a bowl and whip it to a strong froth. Having lined your pans or molds with sponge cake fill them with the mixture and set them on ice, or in a cool place.

Charlotte Russe (Without Eggs).—Soak 2 tablespoons of gelatine in a little cold milk 2 hours. Take 2 coffee-cups cream, 1 teacup milk; whip the cream stiff in a large bowl; set on ice. Boil the milk and pour gradually over the gelatine until dissolved, then strain; when nearly cold add the whipped cream, a spoonful at a time. Sweeten with pulverized sugar, and flavor with vanilla. Line a dish with lady-fingers or sponge-cake; pour in the cream and set in a cool place to harden.

Calf's Foot Jelly.—Boil 2 calf's feet in 4 quarts of water until it is reduced to 1 quart; strain, let it get cold, and take off the fat; then add the well-beaten whites of 7 eggs, the juice of 4 lemons, and 1 cup of sugar; mix thoroughly, and boil, with constant stirring, for about a minute, and strain through a bag of flannel.

Cider Jelly.—Take $1\frac{1}{2}$ oz. gelatine, the juice of 3 lemons and the grated rind of 1; add 2 cups cold water and let it stand 1 hour; then add $2\frac{1}{2}$ lbs. loaf sugar, 3 pints boiling water, and 1 pint boiled cider; put into molds, and set in a cool place.

Coffee Jelly.—Take 2 cups sugar, 2 cups strong coffee, 3 cups boiling water, and 1 box gelatine. Soak the gelatine in cold water, then put the boiling water on it; then stir the coffee and sugar in it, and place in molds. Eat it with whipped cream. Whipped cream piled around it makes it a very elegant dish.

English Cream Jelly.—Mix 8 beaten egg yolks with 10 spoonfuls of sugar and 1 of Royal vanilla flavoring. Stir this into 1 quart of milk, and stir over the fire till it thickens. Strain, and stir occasionally till cool. Having soaked 2 ounces gelatine in a pint of cold water, add to it 1 pint of boiling water, and, when dissolved and smooth, strain into the cream and put into wet molds.

For *Chocolate Cream* proceed as above, omitting the vanilla, and adding $\frac{1}{2}$ lb. of melted chocolate. Cooled in layers, with yellow cream, it makes a very handsome dish.

Gooseberry Cream.—Take off the tops and stalks from $\frac{1}{2}$ cup of gooseberries, and stew them in 1 plump half cup of sugar in $\frac{1}{2}$ cup of water; then pulp through a sieve. Melt 1 oz. gelatine in $\frac{1}{2}$ cup of milk. Whip 1 cup cream well and stir lightly in with the pulp; add the gelatine and milk; and stir till nearly cold. Put into a mold and cool.

Lemon Gelatine.—Use 1 box of gelatine covered with 1 pint of cold water; let stand $\frac{1}{2}$ hour; add 3 pints boiling water, 2 pints of sugar and the juice of 4 lemons; let stand until all is dissolved, strain and put in a mold.

Lemon Jelly.—Place $\frac{1}{2}$ box gelatine in a pint of cold water, and set it on the stove where it will heat and dissolve gradually. When dissolved, add another pint of hot water, and sugar and lemon juice to taste—about 2 lemons, if small,

will suit the taste of most people, but the more lemon juice, the more sugar. Make it the day before using, and set in the ice-chest to harden; serve with thick whipped cream. Mock cream may be served with it if liked.

Macedonian Jelly.—Put 2 ounces of gelatine in 3 pints of cold water and place it on the stove, where it will heat gradually and dissolve. Add to the hot gelatine the strained juice of 2 lemons, and sugar to taste. Cool a little of the jelly in a mold by setting it on ice; when solid, add a layer of nicely-washed Zante currants, seeded raisins, and stoned dates, then cover the fruit with more of the warm jelly; harden again on the ice, and repeat the process until the mold is full. Fresh grated, or dessicated cocoanut, may be used instead of fruit, if preferred.

Orange Cream.—Squeeze the juice from six oranges and 1 lemon; strain it, and put it into a sauce-pan with 1 oz. isinglass; add enough water to make in all $1\frac{1}{2}$ pints. Rub sugar enough to sweeten to taste, on the orange and lemon rind, add it to the other ingredients, and boil all together about 10 minutes; strain through a muslin bag, and when cold beat up with 1 cup sweet cream; put it in a wet mold, and set in a cool place to harden.

Orange Jelly.—For delicious orange jelly, which does not require boiling, take 4 good-sized oranges, grate the rind of 2 and use the juice and pulp of 2 lemons; take $\frac{1}{2}$ box of gelatine, and soak it in 1 cup of cold water; sweeten to suit the taste, and put with the juice of the fruit, and add $\frac{3}{4}$ of a pint of boiling water. Strain into molds.

Orange Jelly (French).—Swell 2 oz. of gelatine in 2 quarts of cold water, with 12 spoonfuls of sugar, and the whites of 2 eggs beaten to a froth; strain through a wet napkin into an earthen dish; add the rind of 4 very fair oranges, pared very thin; cover, and partly cool; add the juice of 8 oranges and 2 lemons; strain, and mix with the other ingredients. A few drops of yellow coloring is an improvement. It is then ready for cooling.

Peach Cream.—Cut the contents of a can of peaches into very small pieces; dissolve $\frac{1}{2}$ a box of gelatine by heating it slowly, on the back of the range, in a coffee-cup of cold water; then mix the fruit and gelatine, and when partly cooled, beat a pint of sweet cream until stiff; add sugar to taste. Mix all together and pour into a mold to harden.

Pineapple Cream.—Peel and shred a pineapple, add $\frac{3}{4}$ cup of powdered sugar and the juice of a lemon, beat till stiff 1 cup sweet cream, dissolve 1 oz. isinglass in a little hot water; mix all together lightly and pour into a mold; serve cold.

Pineapple Jelly.—(1) Slice pineapple thinly, sprinkle it with sugar, and let stand 2 or 3 hours; make a stiff jelly with gelatine and when cool enough to begin to thicken put a layer of the pineapple in a glass dish; cover it with the jelly and when it sets add more fruit, and so on alternately until the dish is full; then set on ice. Serve with whipped cream. (2) For a variety alternate layers of pineapple and sliced orange can be used, sprinkling on lemon juice and sugar; serve cold without cream.

Prune Jelly.—Soak 1 lb. of prunes in 1 quart of water 3 hours; drain them, and strain the water in which you soaked them; put it on the range, with 1 lb. of sugar, and let it boil $\frac{1}{2}$ hour. Remove the stones from the prunes and put them into the boiling syrup, and boil it up again; have $\frac{1}{2}$ box gelatine which has been soaked in a little cold water and stir it into the boiling prunes. Pour into wet molds, and set to harden in a cold place. Serve with sugar and cream, or whipped cream. If desired for a variety the juice of 2 oranges and that of 2 lemons, with 2 tablespoons of sugar, can be added with the gelatine.

Rice Cream.—Thicken a pint of new milk with rice flour to the consistency of cream; sweeten and flavor to taste. Beat the whites of 2 eggs to a stiff froth. Put $\frac{1}{2}$ ounce of gelatine to $\frac{1}{2}$ pint cold water; when well soaked place over the fire until the gelatine is dissolved. When cold beat to a froth with an egg-beater and mix with an egg. This is excellent for inflammation of the bowels.

Russian Jelly.—Dissolve 3 ounces of gelatine in 5 cups of cold water, by placing it over a moderate heat; when warm and thoroughly dissolved, add the juice of 2 lemons, and sugar to taste; stir all together until well mixed, and the sugar melted; flavor with extract of anise seed, strain, and when nearly cold beat to a froth with an egg-beater, then pour into a mold, and place in the ice-chest to harden. A little raspberry, or other fruit juice may be used for coloring, if preferred.

Russian Cream.—*The Jelly.*—To 1 package of gelatine add 1 pint of cold water. When dissolved add 1 pint of hot water, 2 cups of sugar, juice of 6 lemons. Stir slowly until well dissolved, then strain into molds. *The Cream.*—Cover 1 package of gelatine with cold water. When dissolved add 1 cup of new milk, 1 cup sugar; heat to boiling point, stirring frequently; then set away to cool. Whip 1 quart of thick cream until light, beat the whites of 6 eggs, and add both to the mixture; when cool flavor with vanilla. Place the *jelly* in the bottom of the molds, and when stiff and cold add the *cream*; turn out of mold and serve in slices.

Strawberry Jelly.—Mash a quart of strawberries, add a coffee-cup of water, and let them stand where they will become hot, but not boil, while $\frac{1}{2}$ a box of gelatine, in a pint of cold water, is gradually dissolving and heating, on the back of the range. Strain the strawberry juice into the gelatine, and add sugar to taste; place it in a mold to harden in the refrigerator. The juice of half a lemon can be added if desired, and it can be served plain, or with whipped cream alone, or with whipped cream and sponge cake. The juice of other berries like raspberries or currants can be used if desired, sweetening to taste.

Spanish Cream.—Put $\frac{1}{3}$ of a box of gelatine in $1\frac{1}{2}$ pints of milk and soak $1\frac{1}{2}$ hours; then simmer slowly, and add the yolks of 3 eggs beaten with 1 cup sugar; add a pinch of salt and any flavoring desired. Let the mixture cool a little, and add the 3 well-beaten whites; turn in glasses or custard-cups, and serve cold.

Snow Pudding.—Use 1 pint water, 1 cup sugar, juice of 1 lemon, $\frac{1}{2}$ package of gelatine; dissolve and strain into cups or molds, enough for each person; let stand until partly cool. Beat the whites of 2 eggs stiff, and stir a portion into each cup with a fork; it will look exactly like snowflakes all over the pudding. With the yolks of the eggs make a thin custard for sauce. Put the molded pudding into sauce plates, and pour the custard around each when served. Good for Sunday dinner, as it can be made Saturday and kept in a cool place, and is better than when first made.

Velvet Cream.—Soak $\frac{1}{2}$ box gelatine in 1 cup warm water, adding the grated rind and juice of 2 lemons and 2 cups sugar; heat and stir till it dissolves, but do not let it boil; when nearly cold, but before it begins to stiffen, add the cream and beat thoroughly together until stiff; then pour into molds, and set on ice to harden. Half fill the molds first with nice strawberries, if desired, for a variety.

Vanilla Cream.—Soak 1 ounce of gelatine in cold water 1 hour, drain and dissolve in a little hot water. Thoroughly beat the whites of 6 eggs and beat in 1 quart of whipped cream, add sugar to sweeten, and flavor with $1\frac{1}{2}$ teaspoons of vanilla; then add the gelatine, beat until it begins to thicken and pour into molds. Serve very cold with cream.

ICE CREAM, WATER ICES AND SHERBETS.

Ice creams and ices can be easily prepared at home, and without much expense or labor. Many people do not realize how easily many wholesome and attractive dishes can be prepared in this way.

Cream.—Cream which is skimmed off of milk after it has stood 12 hours is called *single cream*; that which is taken off at the end of 24 hours is called *double cream*, and that taken off at the end of 36 hours is called *butter cream*. The best double cream, and which can *all* be whipped to a stiff froth, is obtained by letting "single cream" stand 12 hours, and then taking off the richer part. The best cream to use is "double cream," the next best is "single cream." If any milk is used it is apt to give the ice cream a mushy, snowy taste, because the water it contains will freeze into coarse crystals, and it melts quicker than when pure cream is used. *Gelatine* is sometimes added to such cream to give it firmness and disguise the milk. There are many so called ice creams made with corn-starch, etc., without using any cream at all; of course real cream is superior to any substitute, but for economy's sake the substitutes are often used. The more water and less cream used, the easier ices are frozen. When short of cream it is well to remember that to add a little, if not more than $\frac{1}{2}$ teacup, is always better than to use none.

Condensed Milk can be used by mixing it with scalded milk (1 can of condensed milk to $1\frac{1}{2}$ quarts of scalded milk) making it into a thick custard, and freezing it; flavor to taste, but rather highly.

Sugar.—Double refined or sifted white sugar is the best to use. See what we say about eggs in the introduction to our article on "Cake." Ice cream should seem quite sweet before freezing, as when frozen it seems less so.

Arrow-root, etc.—A little arrow-root added to the plainer creams gives them a smooth consistency, but the best creams are made without it. Arrow-root is more delicate and better to use than corn-starch or flour in creams.

Ice.—The best ice to use is snowy ice which is full of air-holes, and is readily penetrated by the salt. The ice is most readily broken up by putting it in a coarse bag or coffee-sack, and pounding it with an ax or wooden mallet until it is broken into pieces about as large as walnuts. The finer it is broken the faster it melts. Snow makes an excellent substitute for ice, and in winter can readily be used. Pack it firmly into the freezer, add enough water to make it into a thick mush, and then put in the salt. The proportion is about 2 to 3 parts snow or ice, to 1 part salt. It is not necessary to draw off the water as fast as the ice melts, but wait until it floats the ice.

Salt.—The best salt to use is Turk's Island salt; rock salt is next. For the first freezing, have it coarsely ground, and have it in small lumps for the "packing down" after the freezing is done. Fine table salt melts the ice too rapidly and is not suitable. When through with a freezer, any salt left in it may be drained, dried, and used again.

Canned fruits, etc., when used in creams, should be opened an hour before using, and turned into a pitcher to aerate; this improves their flavor very much.

For extracting lemon juice a glass squeezer is best. If a metal one is used, do not let it stand a few minutes, and then use it again without washing, as the acid will attack the metal, and so taint the flavor.

Orange juice can be extracted, without any bitter flavor, by cutting the orange in two, removing the pulp with a teaspoon, and straining it through a piece of clean cheese cloth.

Flavoring.—Ice creams should seem quite highly flavored before being frozen, as after freezing they will seem less so.

The Freezer.—Buy a freezer larger than you actually need to hold the cream to be frozen. Cream is better if there is room allowed for air, and this is espe-

cially true of sherbets and water ices; besides this the cream expands $\frac{1}{4}$ to $\frac{1}{3}$ in freezing, so that it is better not to fill the can more than $\frac{1}{2}$ full. Less ice and salt are required in proportion to their contents by large than by small freezers.

When not in use, the can of a freezer should be kept uncovered. After being used it should be cleaned, scalded, and thoroughly dried before being put away.

Freezing the Cream.—Before beginning to freeze ice cream let it stand in the freezing-can, packed with ice, but covered only with gauze, until it is thoroughly chilled; if this is done it will freeze more readily and take less ice, and, also, if not cooked, it is apt to become granular, or curdle, if the attempt is made to freeze it while warm or lukewarm.

There are many freezing-machines on the market which are nearly equal in value, and less ice is required by them than by an open pail. Directions for using the different machines are furnished with them, and we advise those who can do so to get a good freezer of some kind. Those, however, who have no freezer can make ices by using a tin pail with a close cover, and setting it in a larger pail which holds the ice and salt. First, pack in solidly a layer of broken ice about 3 inches deep, then set in the pail containing the ice-cream mixture, and pack the ice and salt around it; next sprinkle on a layer of salt, then about 3 times as much ice, distributing it evenly, and packing it down firmly, then more salt, and so on until the freezer is full, covering it over the top also, and then cover it all over with an old carpet or blanket. After letting it chill for about an hour, open up the can, scrape the frozen cream from the sides, and beat all together thoroughly until it is smooth; the quality of the cream depends on doing this thoroughly; then turn off the brine, put on fresh ice and salt, covering it over the top, lay on the carpet, and leave for 2 or 3 hours until frozen. The can holding the mixture should have a tight lid, so that not a drop of salt or brine can get into the cream.

A little ice cream for the use of an invalid can be put in a baking powder can or tin pail, packed in salt or ice for 10 minutes, then opened and stirred well, then let stand until the freezing is complete.

Do not allow ice cream or fruit ices to stand long in tin or copper vessels, certainly not when above the freezing point, for the melting cream will decompose and develop lactic acid, which will attack the metal, producing a poisonous compound.

Packing Down.—Newly-frozen ice cream is apt to be mushy, and lacks flavor and consistence, so that after being frozen, it is best to pack it down and let it ripen 4 or 5 hours before it is served. In packing down ice cream which is to be kept some time, turn off the brine, pack in some coarser ice and salt, and cover with an old carpet or blanket wet in the brine. Keep the carpet wet by rewetting it from time to time, as then much less ice is needed because the evaporation keeps it cold. As long as any ice lasts the temperature will not rise above the freezing point.

The principles involved in making ice cream are as follows: There are various freezing mixtures known and occasionally used, some of which we give elsewhere, but for our present purpose the ingredients almost universally relied on are ice and salt. All freezing mixtures have some solid substance which turns to a liquid, and in so doing it absorbs heat from the surrounding substances and so reduces their temperature, and this is the philosophical principle underlying the whole process. The ice is submitted to the action of the salt, which has a great affinity for it and melts it very rapidly, and the ice in turning to water withdraws heat rapidly from the various preparations of cream, etc., which are buried in it, and so reduces their temperature rapidly and freezes them. But from this it will be clear that the cream will not freeze until the ice around it begins to melt. So also the smaller the pieces of ice the more readily the salt will act on them and melt them. It is a mistake to think that the freezing needs to be done in a cold place. In a warm room the ice melts more rapidly, and so draws the heat more rapidly from the mixture submitted to its action; but if the cream is kept after being frozen, it should be in a cool place, of course.

The object of the continual stirring of the ice cream is to keep the ingredients from separating, and the heaviest of them from settling to the bottom, while any cream which washes up against the side of the can and freezes must be scraped off and mixed in with the balance of the contents. Unless the contents are thoroughly stirred before the freezing takes place the whole will be spoiled; either lumps will form, disfiguring and discoloring it, or the sugar will settle to the bottom, leaving the contents imperfectly sweetened. It is a mistake to turn the dasher of a freezing machine rapidly, as that prevents the cream from being smooth; turn it fast enough to accomplish the above objects, but that is all.

Molds.—Molds are prepared to form the cream into many fanciful shapes. If they are used, after freezing the ice cream press it into them firmly, so that there are no air spaces, have the cover firmly pressed down, wrap buttered paper around

the joint, and bury them in ice and salt. When ready to serve them, wash off the brine, take off the cover, turn the mold on to a dish, and the ice cream will soon slip out if the room is warm. The molds are sometimes dipped in warm water to loosen the contents, but this is apt to melt the cream too much, and make it run down the sides and disfigure it.

If it is desired to use 2 colors, freeze them separately, fit a piece of card-board into the mold which is to be filled, pack in 1 kind of ice cream on each side, withdraw the card-board, and set the mold on ice.

Coloring Ices.—For coloring ices and creams, caramel can be used, or the amber color and some of the others mentioned under "Colorings for Frostings" (which see). Only vegetable colors should be used.

Simple Syrup can be made by putting 2 lbs. of the best lump sugar to 1 quart of water; stir occasionally till it dissolves, bring to a boil, take off any scum as it rises, draw to the side of the fire, and let it boil gently. If boiled too fast it troubles an inexperienced operator, as it will candy. Should this happen, add more water and boil again till the requisite strength is attained. Test it by letting a drop fall into a glass of cold water; if it retains its shape it will answer. When cold, bottle and keep for use. It will keep any length of time, and can be used for many purposes.

When too much syrup is present a mixture will not freeze readily. The remedy is to thin it with a proportionate quantity of liquid, according to the description of ice you are making.

PHILADELPHIA ICE CREAM.

Philadelphia ice creams, so-called, are those which are made without eggs (those made with eggs are called Neapolitan creams) and many people prefer the Philadelphia creams to any others, as they have a light, snowy texture.

Methods of Making.—There are 2 ways of making ice cream—one is by cooking and the other is without cooking the cream and sugar. It is a little less work to make it without cooking, and the texture is white and snowy, but cooking not only prevents any tendency to curdling, but also gives the cream more richness and body. If the cream is cooked, put it in a double boiler, set it on the stove and stir often; take it off the stove when the water in the outer pan boils, add the flavors and sugar, stirring it till the sugar dissolves; let it stand a few minutes, strain, and put it into the freezing-can and freeze.

If uncooked cream is used, it is a good plan to whip a part of it, chill it, and stir it in just as the freezing cream is beginning to set.

The cooked cream is rich and solid; the uncooked is snowy and lighter in color, and when part of the cream is whipped it is very white and delicate, and suitable to put in molds to decorate the table.

Philadelphia Ice Cream No. 1.—Take 1 quart of rich cream, 1 heaping cup (which equals $\frac{1}{2}$ lb.) of sugar, and flavor to taste. This makes the simplest form of ice cream, and these materials form the basis, and the above are the standard proportions for all the best Philadelphia ice creams.

We give 1 or 2 other recipes for Philadelphia ice cream which are sometimes used:

Philadelphia Ice Cream No. 2.—Mix together 2 quarts of thick cream and 1 pint of milk and $\frac{1}{2}$ lb. of sugar; dissolve 1 tablespoon of soda in 4 tablespoons of hot water, cool it, and add to the cream just before freezing. Flavor to suit the taste.

Recipe No. 3.—Heat 3 cups of fresh milk, and when it comes to the scalding-point have ready 2 tablespoons of arrow-root dissolved in a little cold milk and add it; when of the consistency of cream, remove from the fire and cool, stirring frequently to prevent lumping; add this custard to $1\frac{1}{2}$ quarts of well-whipped cream, and $1\frac{1}{4}$ cups sugar; flavor to taste and freeze.

NEAPOLITAN ICE CREAM.

Method of Making.—To make cooked Neapolitan cream, proceed as follows: Beat the yolks of eggs, add the sugar, and beat again; then stir in the well-beaten whites and mix all into the cream. Cook it over a good fire, in a double boiler, with continual stirring, until a knife-blade dipped into it will be slightly coated without its running, but do not let it curdle; then remove from the fire, strain, let stand until cold, and put into the freezing-can. This method is best suited for caramel, chocolate, coffee, vanilla and nut ice creams. Should the custard curdle while being cooked do not throw it away, as if well frozen, it will come out smooth.

There is a simple rule with regard to the use of sugar in these creams which it will be convenient to know. Use $\frac{1}{2}$ lb. (or 1 heaping cup) of sugar to sweeten each quart of cream; 2 quarts of cream would therefore require 1 lb. (or 2 cups) of sugar, and so on. Anywhere from 1 to 6 eggs are used for each quart of cream, and more sugar is required to sweeten eggs than cream, the rule being $\frac{1}{2}$ lb. of sugar to every 12 eggs—as the number of eggs vary, alter the amount of sugar to correspond; thus 1 quart of cream and 6 eggs would require $\frac{3}{4}$ lb. of sugar, and so on.

Neapolitan Ice Cream No. 1.—Take 6 eggs, 1 quart of cream, $\frac{3}{4}$ lb. of sugar; flavor to taste and prepare it as directed in the above paragraph. This is the standard formula for the best Neapolitan cream made by confectioners. Various flavors are used, as vanilla, coffee, chocolate and caramel, and nuts may also be introduced, like filberts, almonds, etc., and such fruits as apricot, cherry and peach, thus giving variety to the cream.

While the above is the standard formula, used by first-class confectioners, and it makes the richest and best cream, many other combinations are used, and the cooking is often dispensed with. We give 2 or 3 sample recipes.

Neapolitan Ice Cream No. 2.—Take 1 pint of milk, the yolks of 2 eggs, 6 oz. of sugar, and 1 tablespoon of arrow-root; scald until it thickens. When it is cool add 1 pint of whipped cream and the whites of the 2 eggs beaten to a stiff froth; flavor to taste, and freeze.

Recipe No. 3.—Take 1 quart of rich milk or milk and cream, 4 eggs and 4 tablespoons of sugar; beat the eggs and sugar together, stir it into the milk or cream, cool, flavor and freeze.

Recipe No. 4.—Picnic ice cream. Take 3 pints of milk, 1 pint cream, $1\frac{1}{2}$ cups sugar, whites of 3 eggs beaten to a stiff froth; flavor and freeze without cooking. It can be made and served in 1 hour.

VARIOUS FLAVORED ICE CREAMS.

Variety in ice creams is produced mainly by varying the flavors. One of the recipes which we have given for either the Philadelphia or Neapolitan ice creams can be used as the basis, and by using different flavors an endless variety of creams can be produced. We give directions following for making many of the best and most popular of the flavors in use. All that is needed is to prepare the ice cream by one of the recipes which we have previously given, and flavor it with any desired flavor, according to the directions given.

Almond Ice Cream.—After blanching the almonds pound them to a paste, adding a little rose-water to prevent their oiling; then add it to any of the above ice creams for flavor. Use about 3 oz. almonds to the quart of ice cream. Another flavor is produced by blanching the almonds, roasting them in the oven to a golden brown, and pounding to a smooth paste in a mortar with a little sugar and cream.

Baked Apple Ice Cream.—Use 6 good sized sweet apples to 1 quart of ice cream; bake the apples, pass them through a sieve, sweeten, stir it in the cream, and freeze.

Banana Ice Cream.—Put 3 cups milk into a double boiler and bring to a boil; then add 1 heaping cup of sugar and thicken with 1 tablespoon of arrow-root dissolved in cold milk; when it forms a thick custard take from the stove and cool; when cold, add 1 pint of cream and 6 thinly sliced bananas, and freeze.

Bisque Ice Cream.—This is cream to which something is added to give it roughness, like nuts or powdered macaroons: Dissolve 1 cup sugar in $1\frac{1}{2}$ quarts of cream; add $\frac{1}{2}$ cup caramel and $\frac{1}{2}$ cup hickory-nut meats, chopped fine; then freeze. Other combinations can be used.

Caramel Ice Cream.—Use about 3 tablespoons of caramel for each quart of ice cream. See our directions for making caramel. A little less sugar will be needed when caramel is used. This is highly esteemed by many persons.

Chocolate Ice Cream.—Use about 4 to 5 ounces of chocolate to the quart of ice cream. It should be rubbed smooth in a little milk. A little vanilla is also added often, and a little cinnamon gives it spicy flavor; steep the cinnamon in warm water, and use the clear liquid for flavoring. Or, for variety, a little caramel can be used instead of the cinnamon flavor. That makes a *chocolate caramel* ice cream, and many people like it.

Coffee Ice Cream.—Use about 4 tablespoons of very strong coffee to each quart of ice cream. If preferred, ground coffee can be boiled with the milk. A little arrow-root is sometimes added with coffee cream.

Tea Ice Cream.—Strong tea can also be used for a flavor the same as coffee.

Fruit Ice Cream.—Soft fruit, like raspberries or strawberries, should be mashed, sweetened, strained through a colander or not, as preferred, and stirred into the ice cream when partly frozen. Firm fleshed fruit, like peach, apricot, plum, etc., should be cut into small pieces, sugar added, allowed to stand until the sugar is dissolved, and then stirred into the cream when it is partly frozen.

Preserved Fruit and Jams can be used instead of fresh fruit for ice cream. For water ices fresh fruits should always be used. If the juice or fruits are deficient in flavor add lemon juice.

Fruit Juice Ice Cream.—Mix any desired fruit juice with sugar to form a clear syrup, and then beat it into the ice cream after it is frozen, or stir it in after beginning the freezing. Fruit juice should never be cooked with the cream or milk. Use 1 cup of the prepared juice to 1 quart of cream.

Gelatine in Ice Creams.—Use $\frac{1}{2}$ oz. of gelatine to 2 quarts of custard, (soaking it in a little cold milk) and dissolve it in the boiling custard just before taking it off the stove. The gelatine should be disguised by high flavoring; it is used to help the molding of thin creams.

Lemon Ice Cream.—Grate the rind of 1 lemon into $1\frac{1}{2}$ cups of sugar which will extract the volatile oil; then add the juice of the lemon and stir in 1 quart of cream; strain and freeze at once or the acid will turn the cream. Or lemon extract can be used to flavor our recipe for Philadelphia ice cream.

Macaroon and Brown Bread Ice Cream.—Dry the brown bread, pound or crumble it, sift it through a sieve, and beat it into the ice cream when partly frozen.

Macaroons can be roasted to a bright brown, crushed, sifted and stirred in in the same way.

Nut Ice Cream.—Take walnuts, hazel-nuts, or similar nuts, chop fine, and stir.

them into the ice cream when it is partly frozen. Or they may be pounded in a mortar to a fine paste and then used.

Orange Ice cream.—Use oranges same as directed for lemon ice cream.

Pineapple Ice Cream.—To each quart of ice cream allow 1 large pineapple; pare, slice, cut it very fine, lay it in a deep dish and sprinkle with sugar; cover the dish, and let it stand 2 or 3 hours; then strain through a sieve, mashing and pressing out all the juice; stir it gradually into the cream, beating well. A few slices of pineapple can be retained unsugared, if desired, then cut into dice and when the cream is frozen stir them in.

Pistachio Ice Cream.—Use $\frac{1}{2}$ cup pistachio-nuts to 1 quart of cream; blanch the nuts, put them in a mortar and pound to a fine paste, adding a little rose-water, and a little sugar and cream; then add it to the ice cream. As pistachio-nuts are costly, almonds make a good substitute for them.

Tutti Frutti Ice Cream.—This is an Italian name meaning simply "all fruits." Any kind of candied or crystallized fruit can be chopped fine and stirred into the ice cream when it is partly frozen; or home-made preserves, with the syrup drained out, and chopped up, can be used. Mix any kinds of fruit you have, or desire to use to get a good effect, as pineapples, plums, pears, cherries, etc.

Vanilla Ice Cream.—Use 1 tablespoon of vanilla extract, or $\frac{3}{4}$ ounce of vanilla sugar to each quart of ice cream. For making vanilla sugar see the introduction to "Cake." It should be introduced while the cream is cooking, and fully dissolve. This is one of the most popular creams.

Macedoines.—These are formed by mixing 2 or more fruits. Those should be selected whose flavors harmonize, as strawberry and lemon; orange and apple; apricot and peach; pineapple and orange; grape and plum, etc.

Nesselrode Pudding.—Scald in a double boiler, 1 quart of rich milk—the more cream it has the better; then add the yolks of 4 eggs and 1 cup sugar beaten to a cream, and 2 cups chestnuts which have been shelled, blanched, boiled 30 minutes, and mashed to a pulp; strain, put it into the freezer, and when partly frozen stir in 2 cups of any fruit liked—berries, stoned cherries, currants or peaches—and finish freezing; it should stand 2 or 3 hours before serving, to ripen.

Iced Strawberry Pudding.—Boil 2 heaping cups of sugar and 2 cups water together for 30 minutes, watching carefully that it does not get too thick. Beat the yolks of 6 eggs very light, and add to the boiling syrup; stir a moment over the fire, then turn into a large bowl, and beat continually until cold and thick like a sponge-cake batter; then add 1 pint of strawberry juice and freeze. Other fruit juices can be used instead of strawberry if desired, and so produce varieties.

Mousse.—This is a French word meaning moss, and is applied to cream so frozen as to give it a mossy look. Make it as follows: In 1 cup cold water soak $\frac{1}{4}$ box gelatine, and then set it over hot water to dissolve; whip 2 cups of cream, turn it into a basin, add the gelatine and $\frac{3}{8}$ cup of powdered sugar; add the flavoring, and stir carefully from the bottom towards the top until it begins to stiffen; have a mold ready, wet with cold water, turn in the mousse, lay on a piece of greased writing paper, turned greased side up, fit on the cover tightly, and pack in ice and salt 1 hour. Or it can be put into a freezer and frozen until it begins to thicken, then put in the molds, and packed in salt and ice. Flavor it with vanilla, or any flavoring desired, and also stir finely-chopped fruit in it if desired, the same as in ice cream.

Frozen Fruit.—Cut firm-fleshed fruits like peaches, pineapples, apples, etc.,

into dice; grapes, plums, etc., should be stoned and chopped, but strawberries and raspberries need not be crushed. Add sugar to sweeten, and when that is dissolved put them in the freezer and freeze. If desired, a little whipped cream can be added when they are partly frozen, but they are delicious without it.

Fruit Molds.—Take molds, line them with ice cream, and into the center put any fruit liked, cut into dice; or fill with berries, if preferred; put ice cream over all, press down the cover, and pack in ice and salt. Chill the fruit thus, but do not freeze it.

WATER ICES AND SHERBETS.

Water ices and sherbets (sherbet means a drink) are all composed of the juice of fruit, sugar and water. They vary much in richness from the ordinary lemonade which has been frozen, up to those composed of equal parts of sugar and pure fruit juice. They have been less popular than ice cream because they not only become soft and spongy and melt soon on exposure to the air, but as ordinarily made they are often lumpy, have a gritty taste, and a texture like a stiffened compound of flavored water and snow. If the following method is pursued they can be made much like ice cream in texture, being firm, smooth and delicious.

Method of Making Water Ices and Sherbets.—Cook the water and sugar to a clear syrup in a double boiler, take off the scum, strain it (using fine muslin cloth for the strainer), and let it cool; then add the other materials (fruit juice, etc.) and put all into the freezer, pack in the ice and salt, and freeze it. It will take rather longer to freeze than ice cream, but slowly turn the crank until the contents become stiff; then the can should be opened, the sides scraped down, and all stirred till smooth; the beaten white of 1 egg, with 1 teaspoon of pulverized sugar beaten with it, should then be added, and worked in till smooth. This amount of egg and sugar will be sufficient for 4 quarts of sherbet. Then let the brine off, pack again with ice and salt, and let stand 2 or 3 hours to ripen, covered with a carpet wet in brine, keeping it wet. Then open it, beat again and again pack down. *Fruit jellies*, when used, should be melted very carefully in water, then cooled, and frozen as just explained.

If the granular kind of ices are preferred, the cooking should be omitted, the ingredients mixed and then frozen; also omit the beaten egg and sugar added last as above directed for finish. Some people dissolve a little gelatine and add it to water ices, as it makes them smooth.

In preparing water ices remember that too much sugar prevents freezing, and too little makes them brittle.

Ices are not considered very wholesome. They should not be taken at once after violent exercise, nor while very warm, and they are apt to retard digestion if taken while that is going on.

Granites and Frappes (pronounced frap-pay) are formed by mixing the ingredients without cooking, and only about half freezing them, so that they are like wet snow. The ingredients used are fruit juice, sugar and water, the same as for water ices and sherbets.

Orange Ice.—Take 12 fine juicy oranges, squeeze out the juice and pour a little boiling water on the pulp to extract the juice from that; add the juice of 2 lemons, the grated rind of 2 oranges, $1\frac{1}{2}$ lbs. of sugar, and 1 quart of water; strain and freeze. When about half frozen add the beaten whites of 2 eggs.

Lemon Ice can be made the same way, but may need more sugar.

Pineapple Ice.—Mix 1 can of chopped pineapple, 2 cups sugar, and 2 cups of water; then freeze. Or 2 cups fresh fruit can be used instead of the canned. A little lemon or orange juice or both are sometimes added to improve the flavor. A little gelatine dissolved and strained is also added sometimes.

Strawberry Ice.—Mix 2 cups of strawberry juice, 2 cups of sugar and 3 cups of cold water. Soak 1 tablespoon of gelatine in 2 tablespoons of cold water, then add 2 tablespoons of boiling water and when thoroughly dissolved strain and mix with the strawberry juice and sugar; then freeze. In winter strawberry shrub may be used in place of the juice and it will be nearly as good, but it should be

colored with a little cochineal. *Other fruit juices* can be used instead of the strawberry, and thus a variety produced.

Ginger Sherbet.—Make and freeze a lemon water ice; stir into it 4 oz. of preserved ginger, cut into small pieces, and 2 tablespoons of the ginger syrup, and pack down.

Lemon Sherbet.—Take 4 cups water, 2 cups of sugar, juice of 6 lemons, and 1 tablespoon of gelatine. The gelatine should be dissolved in part of the water, added to the other ingredients, strained, and frozen.

Milk Sherbet.—Mix 1 quart of milk, 1 cup of sugar and the juice of 2 lemons; then freeze.

Pineapple Sherbet.—Take 1 can of sliced pineapples, cut it in very small pieces, and cook until soft; add the juice of 4 lemons (strained) and 1 cup sugar; cool, and add $\frac{1}{2}$ lb. of candied cherries cut in small pieces; add cold water enough to make the mixture 3 quarts. Beat the whites of 4 eggs very stiff and mix with the sherbet just before freezing, and freeze at once. This amount will serve 20 persons.

Various Sherbets.—If 2 cups of fruit juice are used to 2 lbs. of sugar and 3 pints water, and it is cooked and prepared as directed in the "Method of Making Water Ices and Sherbets," very fine sherbets can be made. Raspberry, strawberry, currant, apple, cherry, grape and pineapple juice, all work well; or jelly can be used as there directed, but it takes rather more of the jelly than of the juice. The *pulp* of peach, apricot and nectarine can be used instead of the juice. The amount of sweetening can be altered if any of the juices require it.

Sorbet.—Take 1 quart water and 2 cups sugar, and boil together for 20 minutes; then add 1 cup orange juice, $\frac{1}{2}$ cup lemon juice, and 1 can of grated pineapple; cool, strain, and freeze to a mush. Serve as soon as possible after freezing. This can be varied by substituting 1 pint of strawberry or raspberry juice for the other flavors.

HOME CANDY MAKING.

Candy can be made at home for $\frac{1}{2}$ its cost at stores, and when so made you know it is pure, which unfortunately is not the case with some of that sold by the trade. Ladies who delight in making cake, preserves, etc., may easily add this to their other accomplishments. A few failures at first should cause no discouragement, as knowledge comes by experience. As candy will absorb moisture from the air in damp weather, which interferes with its hardening, choose dry weather to make it.

The Materials and Tools.—Confectioner's powdered sugar is the best to use for uncooked candies, as it is prepared expressly for this purpose. It is a kind of powdered sugar much finer than the ordinary powdered sugar. When the confectioner's sugar is not easily obtained the ordinary powdered or fine granulated can be used. For the kind of sugar to use for cooked candies see what we say under "Fondant."

Have nuts or fruit thoroughly dry before using them in candy. Slightly salting most nuts before using them will improve the flavor of the candy. If almonds are to be pounded they will pulverize more readily if after being blanched they are well dried in an open oven.

Oil, or washed butter, is the best to use in greasing tins for delicate candies like macaroons, kisses or ratafias, as salted butter or lard is apt to impart an unpleasant taste.

Porto Rico molasses of a medium grade is best for candy; or use the best New Orleans molasses.

Unsweetened chocolate can be used for caramels and similar candies, but confectioner's sweetened chocolate is better to use to dip candies in.

Many ladies are bewildered by the list of tools and their names, but good results can be obtained with a small sauce-pan, and a silver spoon and fork, although a few other things are an advantage and can be obtained if candy is to be made often. The sauce-pan should not be iron, but brass, copper, tin or enamel will do; 2 or 3 small wooden paddles will be useful. A thermometer costing \$2.00 to \$2.50 for testing sugar will be convenient if much candy is made, but as there are other tests it is not essential. A marble slab with a smooth top will be a convenience, but a large meat plate can be used for small quantities if you haven't that. Candy tongs and candy dippers will also be an advantage, and so will a stout candy hook fastened to the wall on which to pull candies. Any blacksmith can make such a hook, using $\frac{3}{4}$ inch iron, about 14 inches long, bending it into the shape of a fish hook, sharpening the point, and flattening the other end and boring 3 screw holes in it. Fasten it up about 5 feet from the floor.

In making candy use a vessel deep enough to hold it when it boils up, and lift it from the fire when it is in danger of boiling over. Watch carefully to keep it from burning.

In pulling candy have the hands well greased, throw the candy over the hook and pull it towards you; as a rule, take hold of the candy firmly, and make that move without sliding the hands over it or you will blister the hands; as soon as the candy seems likely to break, throw it over the hook again, and continue pulling it thus until it is white and nearly cold.

Greasing the hands is better than flouring them when handling candy, as the flour is apt to unpleasantly affect its flavor.

Coloring.—For this use vegetable colors only, and they are better prepared at home than when bought at the stores. For preparing various colors see "Frosting" for cakes. For *amber* or *light brown*, use a little caramel. For *carmine* or *pink*, use some of the cochineal. For *green* use more or less of the spinach green, according to the shade desired. For *yellow* use saffron, or grated orange rind, which is better, and so on. Only a little coloring matter is needed.

Flavorings.—These should be selected with care. Flavorings for fondant should be as strong as possible and then use but little, because fondant liquifies so easily. Many of the flavorings given in our article on flavorings can be used.

The tea, Bedford, laurel and citronelle, will be found excellent. If chocolate is used it will be an advantage to add a little vanilla. For ordinary candies 5 cents worth of oil of cloves, cinnamon, wintergreen, lemon or peppermint will flavor 50 lbs. of candy. Add flavors the last thing, or when the candy is nearly cold, as their strength is wasted if added while it is hot.

Boiling Sugar.—In boiling sugar it is well to understand the different “degrees,” as the confectioners call them, through which the sugar passes. There are 12 of these degrees called *small thread*, *large thread*, *little pearl*, *large pearl*, *the blow*, *the feather*, *the soft ball*, *the hard ball*, *the soft crack*, *the crack*, *the hard crack*, and *the caramel*. Let us examine this a little, but remember that in handling sugar skilfully much judgment is needed. Suppose we put on the stove 3 lbs. of sugar and 2 cups of water and stir it until it dissolves. After boiling a few minutes it will approach the first degree called *thread*, and as it passes from one degree to another quite rapidly, it must be watched closely and tested often, but without stirring it.

The thread degree is known by dipping the forefinger into the syrup, or touching it to the syrup adhering to a small stick which has been dipped in; then touch the forefinger with the thumb, and draw the fingers apart; if a fine thread is formed which breaks at a *short* distance, and remains on the finger and thumb as a drop, it has reached the *small thread*. Boil a little longer, repeat the test, and a longer thread will be drawn, known as the *large thread*. This is the finger test. A thermometer will show about 220°.

The pearl degree is tested the same way. When the thread reaches from the thumb to the finger, *without breaking*, as they are drawn apart, it has reached the *small pearl*, and when it will spin across as far as the thumb and finger can be separated, it has reached the *large pearl*. Another sign is that the syrup shows bubbles on the surface, but this is more of a hint than a test. The thermometer will show 226°.

The blow degree is tested by dipping a skimmer into the syrup, shaking it a little, and blowing through the holes; if small bubbles or air bladders appear on the other side *the blow* is reached. It will be 230° by the thermometer.

The feather degree is tested in the same way, but more bubbles are produced; another test is to dip in the skimmer, shake it over the pan, and then give it a sudden flit away from you, and the syrup will fly off like feathers, or more properly in threads. At this stage there is not enough water left to hold the sugar in solution, and it will manifest a tendency to crystallize or grain. The thermometer will show 236°.

The ball degree is tested by dipping the forefinger in a basin of ice water, then take a little syrup on the finger-tip and plunge it into the water again, and roll it with the thumb; if it forms a soft ball it has reached the *soft ball* (at 240°). This is the point at which to use it for mint cream drops. When a larger and harder ball is formed, which sticks unpleasantly to the teeth on being bitten, the *hard ball* degree is reached (at 248°).

The crack degree is tested in the same way, and if the sugar adhering to the finger breaks with a slight noise, and does not adhere to the teeth, it has reached the *soft crack*; the thermometer will show 252°. On boiling it up again, and testing the same way, the *crack* degree will be reached at 260°; at 290° the syrup will break short and brittle, cracking like an egg-shell, and is then known as the *hard crack degree*.

The Caramel degree* soon follows, and the syrup loses its whiteness and turns a light straw color. A few drops of some acid, like vinegar, lemon juice or tartaric acid, should be added now to prevent its graining, and the pan should be quickly taken from the stove and set into cold water to prevent the syrup from burning, or it will soon become a dark brown and be spoiled. At the caramel stage the sugar will snap like glass on being dipped into water.

Hints.—Dropping in the acid is called *greasing* the syrup. Do not add too much or you will spoil it. Confectioners have a saying that “there are 20 different ways to grease syrup, but none to make it grain when greasy.”

A small piece of butter put into the pan will prevent the syrup from rising

*The name “Caramel” is derived from a Count Albufage Caramel, of Nismes, France, who discovered this stage of boiling.

over the sides, and will grease or smooth it, and thus act like the acid in keeping it from graining.

For testing the syrup a small round stick is sometimes used instead of the finger; dip it into the cold water, then into the syrup, and then into the water again. Have the water close by, and be *sure* it is cold or it will not test well. If the water is cold enough and the fingers are held in it till *cold*, then dipped into the hot syrup and *instantly* plunged into the cold water again, they will not burn when used to test even boiling syrup.

Keep the sides of the pan clear from crystals of sugar by wiping them off with a damp sponge or flannel, and do not let the crystals drop into the pan, or they will cause granulation. In doing this do not let the fingers touch the syrup or they will be burned. One washing down is generally enough, but repeat if necessary.

If at any time you boil the syrup a little too much, or produce a degree beyond what you wish for, put in a little water and boil it up again. Sugar that has been boiled too often, however, loses many of its good qualities. After dissolving the sugar do not stir the syrup; there will be danger of making it granulate if the pan is shaken while it is boiling. Sugar which has grained can be boiled again and used for taffy or cream candy.

Do not set candy in a refrigerator to cool it, but in a cool, *dry* place. Air-tight boxes are the best in which to keep candy.

FONDANT OR CREAM CANDIES.

Fondant or Cream.—Fondant is the foundation for almost all French candies, and can be easily made by the amateur so that it will look and taste as well as that made by the professional. Granulated confectioner's powdered or coffee A sugar can be used, but coffee A more generally gives good results. For a trial add $\frac{2}{3}$ teacup of water to 1 lb. coffee A sugar; let it stand an hour or so, and then add cream of tartar the size of a white bean, dissolving it first in a little cold water; now set the pan over a *quick* fire (be particular about that, as it is quite important) and stir constantly until the candy begins to boil; then stop stirring at once. After it has boiled a few minutes drop some of it into cold water to test it; try it often, and when you find the candy can be gathered up in the fingers in a ball which does not at once soften when held (about the *soft ball* degree) it is ready to take from the fire, and should be very carefully poured into a pan which has been sprinkled with cold water, and which *sets level*. Be sure the candy is not stirred from the time it begins to boil until it is poured into the pan, as it would grain if stirred. Greasing the pan is often advised, but it is apt to affect the taste of the candy, and we have found moistening sufficient. Let it remain without stirring or shaking until it is almost perfectly cold; then beat it constantly with a large spoon or paddle. In a short time the candy will get white, and then begin to harden; now gather it into a mass and put it on a sprinkled marble slab if you have it; if not, knead it in the same pan in which it cooled, but in either case, knead it as you would bread dough for a few minutes with the hands. If it is not hard enough to knead, stir as long as you can with the spoon and then set away awhile and it may harden sufficiently to work; if not, add a little water and cook again, allowing the ball to cook a little harder than before. Remember that sugar passes very rapidly from one degree to another, and so must be tried often. When cooked enough, pour it into the pan and treat as before directed. If not boiled long enough the fondant will be too soft on attempting to knead it; if boiled too long it will harden too quickly, and be hard and lumpy. Skill in working it will come with practice and experience. This fondant can be used for dipping, and if it is cooked enough it can be made into balls to be dipped in melted fondant. It can also be used for "patties." It can be made in quantities and kept in a stone or china dish or jar, well covered with

waxed or buttered paper to keep the air out, using it as needed; it will keep thus a week in cold weather. Do not scrape the sauce-pan after pouring out the fondant; put a little boiling water in it, set on the stove, and it can soon be easily washed out.

The above fondant will form the foundation for all your French candies. It can be colored with cochineal, saffron, etc., and flavored with any flavoring desired. In working these candies there is a chance for displaying one's taste and skill. It can be made into rolls, and pieces sliced off, or made into cubes, or formed into any shape to imitate French candies. As French candies are nearly all made by hand, you can notice their forms and imitate them. We explain some of the most popular forms for these candies, and you can easily devise others; there is no limit to the varieties which can be produced by varying the flavors, using noyau, maraschino, tea, coffee, and other flavors less common than the vanilla and lemon. Variegated effects are produced by using fondant, variously colored, and so on.

Melting Fondant.—In melting fondant put some of it in a cup and set it in a dish of boiling water, instead of setting it directly on the stove; when melted, the cup can be held in the hand while the dipping or dropping is being done. It is sometimes said that the cup must be kept in hot water during the dipping, but we have not found this necessary, for as soon as it hardens too much to use readily it can be set back in the hot water and softened again. If very hot, it may be too thin; is so, stir a minute till it thickens. If it is too thick, cautiously add a little hot water, 1 or 2 drops at a time, as a little too much water will spoil it for dipping candies, although it can be used for dipping fresh fruits.

In using a fork for dipping candies, grease it well, and do not stick it into the article, but drop the ball or nut into the melted fondant and lift it out with the tines of the fork, using them like a spoon; rest it a second, to drain, on the edge of the bowl, and then deftly drop the coated candy onto the oiled paper.

Orange or Lemon Creams.—Grate the yellow rind of an orange carefully into a plate, and add the juice of $\frac{1}{2}$ an orange and $\frac{1}{2}$ a lemon, and just a dash of tartaric acid; then mix it with enough confectioner's powdered sugar to make a stiff paste, form it into little balls; and set away to dry for a few hours; then melt a little fondant in a cup as before directed, and drop in each little ball, lift it out with a fork, and lay it on oiled paper. If the cream gets too thin to cover the balls well let it cool a minute; if it gets too thick warm it again.

Lemon Creams are made by using lemon in the same way.

Balls.—Fondant can be melted and an equal amount of almond paste stirred into it; this can be formed into balls, and these balls dipped into melted fondant as directed for orange creams. By flavoring this melted fondant with coffee, tea, etc., various effects can be produced, which will be novel and attractive.

Walnut Creams.—Melt a little fondant in a cup as before directed; color it with cochineal, and flavor with vanilla or not, as preferred; then drop in walnut meats, one at a time, taking them out on the tines of a fork, and placing them on buttered paper to harden; then repeat the operation giving each one a second coat. Another way is to flavor a little fondant with vanilla, form it into small balls, press the 2 halves of a walnut on opposite sides of each one, and set it on an oiled dish to harden. If the nuts are slightly salted before being used it will improve the flavor.

Almond Creams can be formed by using almonds instead of walnuts.

Chocolate Creams.—Flavor a little fondant with vanilla and roll it into balls

the size of walnuts; then take some confectioner's sweetened chocolate, heat it, and mix in enough well-beaten white of egg to make a smooth, thick paste; dip each little ball into this paste, and lift it out with a fork and drop it on to oiled paper; if the white shows through, add more chocolate. Let the balls dry for some time.

Raspberry Creams.—Mix a little raspberry jam with enough confectioner's powdered sugar to form a stiff paste, and roll it into little balls between the palms of the hands; then melt a little fondant as before directed, color it with cochineal, and dip in these balls as directed for "Orange Creams," giving each ball 2 coats if needed.

Strawberry Creams can be made with strawberry jam the same way.

Maple Sugar Creams.—Grate fine maple sugar and mix it with fondant to suit the taste, and form into any shape desired. The walnut creams are very nice made with maple sugar.

Cocoanut Creams.—Take $\frac{1}{2}$ cup grated cocoanut, 1 cup confectioner's powdered sugar and 5 teaspoons of milk; mix, form it into little balls, let them dry 3 or 4 hours, and dip them in melted fondant as directed for "Orange Creams." These are very nice covered with maple sugar fondant.

Fruit Creams.—Take some fondant and, while it is warm, work in grated cocoanut, or finely-chopped citron, currants, figs, or other fruit; it can then be formed into balls, bars, or flat cakes, and these set aside to dry.

Dates and cherries can be cut in two, the stones or seeds taken out, and little balls of flavored fondant put inside; then press them together, roll them in granulated sugar, and set to dry. A delicious confection is also produced by putting salted almonds inside, instead of the fondant. Try it.

Canned plums or figs can have the skins and stones removed, then be rubbed to a paste with confectioner's powdered sugar and a trifle of cream of tartar added; then form into balls, and dip as directed for "Orange Creams."

Cream-Coated Fruits.—Melt some fondant, and add any flavoring desired, only select that which will go well with the fruit to be dipped. The fondant can also be colored, if desired, to suit one's fancy. A fondant which is too soft for making the balls or centers for candy, can be used for this purpose. Grapes, currants, cherries, strawberries, raspberries, and other fruit, can then be dipped into the prepared fondant, dipping each berry separately, and laying them to dry on oiled paper, or set them in the little paper cases if you have them. Select choice fruit for this purpose. Fruit thus dipped is quite attractive for dessert or breakfast. Oranges also may be peeled, each carpel separated carefully without breaking the skin, and then dipped in melted fondant, which is colored with grated orange rind, and thinned with orange juice. This process is new and good.

Patties.—These are simply melted fondant, flavored as desired, and formed into drops or patties the size of a half dollar; they will be hard enough to eat in $\frac{1}{2}$ hour. By using different flavors, as peppermint, wintergreen, etc., numberless varieties can be produced.

Uncooked Cream or Fondant.—Pass 2 or 3 lbs. of XXXX powdered sugar through a sieve, shape it like a cone on the table, make a well in the top, put in a little water, work in the sugar till it is absorbed, put in a little more, and keep on thus doing until a smooth, stiff paste is formed. While doing this, work in a little vanilla or any other flavor desired. This will serve as a foundation for any of the candies for which "Fondant" is used, but it cannot be melted to use as a coating.

By varying this uncooked cream a little a variety of fine candies can be produced. Thus *lemon creams* can be made by working up the sugar with lemon juice and a little grated rind; then form them into creams. Or use orange juice and rind for *orange creams*. Or use any fruit juice instead of the water for mixing, such as *pineapple, raspberry, strawberry, etc.*; the flavor is thus easily varied.

Cream Walnuts, Dates, Figs, Cherries, etc.—These can be made from the uncooked fondant as follows: Roll some of the uncooked fondant between the hands into a strip about 1 inch in diameter, and then cut the strip into sections 1 inch long, and, using the hands, roll these into balls; then take each one, press the 2 halves of a walnut on the sides opposite each other, and put them in a pan in rows as fast as formed; set them aside to harden a few hours and they will be ready to use. To prepare *cherries, figs* or *dates*, take out the seeds after cutting them in two, put in a piece of cream, roll them in the hands, and set in rows on a greased dish to harden. If desired, they can be rolled in granulated sugar as fast as formed, to coat the surface; then set aside to harden.

Cream Candies.—Take the whites of 1 or 2 eggs, add an equal quantity of cold water, and stir in enough confectioner's powdered sugar to knead well. Flavor to taste.

Chocolate Creams can be made by flavoring some of this paste, forming it into balls, and dipping it into melted chocolate; grate the chocolate, put it in a dish, and set that in a pan of boiling water till melted; after dipping in the creams, any kind of nuts, figs, or raisins, can be pressed on top.

A great variety of candies can be formed from this cream, as it is in reality only an uncooked "Fondant," and will serve as the foundation for any of the candies previously given for which "Fondant" is used, but it cannot be melted for use as a coating.

Varying the Cream.—This paste is varied sometimes by using milk instead of water, and by beating the egg. Take the white of egg and an equal quantity of milk; beat the egg, add the milk, and form to a paste with confectioner's powdered sugar as above directed; this paste when done is handled the same as the other paste. *Gum arabic* is used sometimes instead of the white of egg; a paste is formed by mixing the gum arabic with confectioner's powdered sugar, and the paste thus formed is worked up in numberless ways. There are many slight changes adopted in making the paste or cream, but the results are very similar.

Lozenges.—Wintergreen lozenges can be made of the above cream by flavoring it with wintergreen, rolling it out thin, and cutting out the lozenges with a little tin cutter. Various other lozenges can be produced by using different flavors, and they can also be tinted with different colors, if desired, for a variety.

Bonbons.—Make a paste by working confectioner's powdered sugar into gum arabic water, and flavor it with vanilla; form it into balls and let them dry. Then dip each ball into a cream made of the beaten whites of eggs and the confectioner's sugar, flavored and colored with chocolate. This last cream should be thin. By varying the flavorings, using different colors, etc., an endless variety may be made.

Cream Nut Candy.—Mix $\frac{1}{2}$ lb. coffee A or granulated sugar in 1 teacup of sweet cream, and heat slowly on the stove till the sugar is dissolved; then boil 5 minutes, and stir in $\frac{1}{2}$ lb. of nut kernels, which should be finely grated or chopped; then boil 10 minutes, and pour it on to buttered plates; cut it into squares when partly cool; it will harden in about 2 days.

Marsh-mallows.—Take 4 oz. of the best white gum arabic, dissolve it in 1 cup of water and strain it; then add a full $\frac{1}{2}$ cup of powdered sugar, set it on the stove, and continually stir until the mixture is about as thick as honey, and the sugar is well dissolved; the well-beaten whites of 2 eggs should then be added gradually, and stirred until the mixture becomes thinned and will not stick to the finger when touched; flavor to taste with lemon, rose, wintergreen or anything preferred. Pour it to cool into a square tin pan dusted with corn-starch. Cut into squares when cold, and dust each one with corn-starch. This will keep best in tin boxes.

Nougat.—Make the marsh-mallow paste as above directed, and then stir in $\frac{1}{2}$ lb. of almonds blanched and cut fine; set to cool as before; then cut, when cold, into long bars and wrap in waxed paper. *Hazel-nuts, pistachio-nuts, etc.*, can be used at times for a variety.

Cocoanut Cream Candy.—Mix the milk of 1 cocoanut and $1\frac{1}{2}$ lbs. coffee A or granulated sugar, and heat slowly until the sugar is dissolved; then boil 5 minutes, add the grated meat of the cocoanut, and boil 10 minutes longer, stirring continually; pour on buttered plates to harden, and when it begins to harden, cut into squares. It will harden in about 2 days.

MISCELLANEOUS CANDIES, ETC.

Glaces.—Take 2 cups granulated sugar, 1 cup water, and $\frac{1}{4}$ teaspoon of cream tartar; boil it to the “crack” degree, that is, so that it will break when in cold water, and will not stick to the teeth when eaten, and set the vessel containing it into a basin of hot water to keep it warm; if it gets too cool while being used, it can be reheated *twice*, but it will not soften after that. Into this mixture can be dipped nuts, such as almonds, peanuts, walnuts, etc., or fruits like grapes, cherries, dates, figs, sections or carpels of oranges, etc. Have the fruit or nuts dry before dipping them, and dip them one at a time. Grapes and cherries can be dipped in by their stems; nuts and so on, can be dropped in and lifted out on the well-greased tines of a fork. Lay them to dry on greased paper or pans, or on a sieve also greased. In damp weather the atmosphere is apt to make them sticky, and even in dry weather they should be kept in an air-tight jar or tin box. Some of the fruits are best eaten within a few hours after being prepared.

Taffy (Lemon).—Put 1 cup of water and $1\frac{1}{2}$ lbs. coffee A sugar over the fire; stir until dissolved, then add $\frac{1}{4}$ teaspoon of cream tartar; wipe down the sides of the pan with a damp cloth or sponge to remove the crystals, and boil until it reaches the “crack” degree; then turn it into shallow greased pans to cool, sprinkling on 1 teaspoon of lemon extract. Mark into squares with a sharp, greased knife, when it is partly cold. Or, it can be turned on to a well-greased slab, and when the edges cool a little they should be turned in toward the center, repeating this every few minutes until it is cool enough to handle. Then pull it as previously directed for pulling candy. If it is pulled, the flavoring extract is best sprinkled on a little at a time during the pulling. Then take it off of the hook, pull it into long strips, and cut these into little blocks 3 or 4 inches long; set them in a cool place on greased pans to cool.

Vanilla Taffy can be made in the same way, but flavor with vanilla instead of lemon.

Molasses Taffy.—Boil 1 quart of New Orleans molasses for 30 minutes in a large pan, so that it will not run over, stirring continually; then add $\frac{1}{2}$ teaspoon baking soda, and boil it to the “crack” degree; then add 1 teaspoon lemon juice and pour it into shallow, well-greased pans or a platter to cool; when partly cool it

may be marked into squares, or pulled to a bright golden color, and finished as directed for other taffies.

Walnut Molasses Candy.—Make the molasses taffy as just directed, and when it gets to the “crack” degree, stir in all the walnut kernels it will hold (have the walnuts perfectly dry); pour it into well-greased pans to cool; cut a lemon in two, and with the flat side press the candy down smooth; cut it into bars with a well-greased knife, when partially cool.

Peanut Molasses Candy can be made the same way, but use peanuts instead of walnuts.

Everton Taffy.—To 1 lb. coffee A or granulated sugar, add 1 teacup of water; cream $\frac{1}{4}$ lb. of butter and have it ready, and when the sugar is dissolved stir it in; flavor with lemon, cook to the “crack” degree, turn it into greased pans, and with a greased knife mark into blocks when partly cold.

Plain Molasses Candy.—Take 2 cups of molasses, 1 cup of brown sugar and 1 tablespoon of butter, and boil until it will harden in cold water; then stir in 1 tablespoon of vinegar, pour it on the buttered plates, and pull as soon as cool.

Adding the sugar makes the candy more brittle; if white sugar is used instead of brown, the candy will be whiter, and if a teaspoon of soda is stirred in well, just before pouring out the candy, it will whiten it still more. The vinegar keeps it from graining, and lemon juice or tartaric acid would answer as well. The butter keeps it from rising over the sides of the pan as it boils, and makes it smoother; some people add a little sweet cream also. The idea that molasses candy should be stirred from the time it is put on the stove until it is taken off is erroneous. A tin lid placed over the pan as soon as it begins to boil, will keep in the steam which will wash the candy from the sides of the pan. When beginning to pull the candy it should be rather sticky, or else it will not be of the right consistency when done. After getting the mass into good shape, pull it briskly a few minutes while holding it over the stove, and the heat and pulling combined, will whiten it wonderfully.

For Peanut Molasses Candy prepare the peanuts while the candy is cooking, lay them on buttered pans, and pour the candy over them when done; cut into blocks with a greased knife when it is slightly cooled.

For Walnut Candy stir in a cup of walnuts just before removing it from the fire; then pour into greased tins and finish as above.

Butter Scotch.—Take 3 cups of white sugar, $\frac{1}{2}$ cup of water, $\frac{1}{2}$ teaspoon of cream tartar and 1 tablespoon of butter; boil, without stirring, to the “crack” degree; add $\frac{1}{4}$ teaspoon of soda and 8 drops of lemon extract, and turn it into well-greased pans, having it about $\frac{1}{4}$ inch thick; when partly cool, mark into inch squares with a well-greased knife.

Sweet Flag Candy.—Take some sweet flag root, wash it, scrape thoroughly, slice very thin, and boil 10 minutes in twice as much water as there is of the flag; drain off the water, and for each cup of this extract add 1 cup thick maple syrup—or sugar will answer; stir well together, and cook till the sugar grains. Excellent for colds.

Cough Candy.—Break 2 oz. slippery elm bark into small bits, add 1 cup water and 2 oz. flaxseed, and let it soak, stirring a few times, for 1 or 2 hours; strain, add 3 cups brown sugar, put it on the stove, stir till the sugar dissolves, and boil 5 minutes; put in 2 tablespoons of lemon juice and bring to the “crack” degree; pour it to cool into greased pans, and cut into small squares when partially cool. This is a valuable remedy for those troubled with throat affections, or who use their voices much, and a pleasant candy as well.

Caramels (Chocolate).—Take 4 cups of brown sugar, 2 cups New Orleans molasses, $\frac{1}{2}$ cup of milk, 2 cups Baker’s chocolate (grated), and butter the size of an egg; stir all together, and boil slowly over a slow fire until it cracks in water (the “soft crack” degree); add vanilla flavor and turn it about $\frac{1}{2}$ inch deep, into large, flat, well-greased tins; when nearly cold, mark it deeply into squares with a greased knife. Break apart when cold, and wrap in waxed paper.

Maple Caramels.—Take 4 cups granulated sugar, 1 cup crushed maple sugar, 1 cup sweet cream; bring to a boil and add 1 tablespoon of butter and a pinch of cream tartar; cook slowly, with constant stirring, to the “soft crack” degree, and finish as directed for chocolate caramels.

Nut Caramels.—Make the same as chocolate caramels and when it is cooked (to the “crack” degree) stir in about 1 lb. of nuts, chopped fine; use walnuts, or walnuts and almonds mixed; then finish as with the chocolate caramels.

Vanilla Caramels.—Cream 2 tablespoons of butter, and work in 1 cup brown sugar; then mix in 1 cup cream and 1 cup New Orleans molasses, and treat as directed for chocolate caramels, flavoring with 1 teaspoon of vanilla just before pouring out to cool.

This can be made into *strawberry caramel* by flavoring with strawberry instead of vanilla, and working in a little red coloring.

Sugar Drops (Peppermint).—Take 1 cup granulated sugar, moisten it with 2 tablespoons water; boil it 5 minutes, then take from the fire and add cream of tartar the size of a pea; mix well, and add 4 or 5 drops of oil of peppermint, and beat it briskly until the mixture whitens (have the cream of tartar and peppermint measured and ready while the sugar is boiling), then drop it quickly on to oiled paper, in drops about the size of peas, or other sizes if preferred. When firm, they can be removed from the paper by moistening it on the underside, and lifting them off with a limber knife. Dry them in a warm place on a sieve, and keep in closely covered boxes. If powdered or confectioner’s sugar is used the drops will be less brilliant. If the sugar dust is separated from the granulated sugar with a hair sieve, it will be an advantage. If the cream gets too hard to drop from the spoon set it on the stove, stir till it gets thinner, and drop as before.

For Ginger Drops proceed exactly the same as for peppermint, but instead of flavoring with peppermint use 2 teaspoons of Jamaica ginger.

For Rose Drops flavor with 7 or 8 drops of essence of rose, and color it with 7 or 8 drops of the prepared cochineal given elsewhere.

Lemon Drops can be produced by flavoring it with 1 teaspoon of acetic acid; or proceed as follows: Use just enough strained lemon juice to dissolve 1 cup of sugar; boil to a thick syrup, drop on to greased plates, and set in a warm place to harden. We prefer the first method.

Wintergreen Drops can be made like peppermint drops, but flavor with wintergreen, and tint with the prepared cochineal.

For Currant Drops moisten the sugar with currant juice instead of water; set it on the stove and melt, stirring constantly, but do not let it boil; then add a very little more sugar, warm it a moment with the rest, drop it on oiled paper, and finish like peppermint drops.

By using *raspberry* or *strawberry juice*, instead of the currant juice, *raspberry* or *strawberry drops* are produced.

Orange Drops.—Take the juice and grated rind of 1 orange, add a pinch of tartaric acid, and stir in enough confectioner’s powdered sugar to work well; form it into balls the size of marbles.

French Chocolates.—Melt some confectioner’s sweetened chocolate in a cup set in hot water, and into it drop nuts of various kinds, or small pieces of candied fruit; lift out each piece with a fork and lay it on oiled paper to harden. A great variety of delicious and popular candies can be made thus, and they will keep longer than the French chocolates sold in the stores.

Hoarhound Candy.—Boil about 1 oz. of the herb in $1\frac{1}{2}$ cups water; then strain

it, stir in 3 cups brown sugar, and when it boils add 2 tablespoons of vinegar; boil until it is brittle when tested in cold water; pour it into greased pans, and mark into squares with a greased knife when partly cold.

Honey Candy.—Take 2 cups coffee A sugar, water enough to dissolve it, and 4 tablespoons of strained honey; boil until brittle on being dropped in cold water; stir in a teaspoon of nut kernels, and pour it to cool in greased pans. Or, for a variety, leave out the nuts and pull it while cooling.

Peanut Candy.—Take 1 cup coffee A or granulated sugar, 1 tablespoon of water, and boil till it will harden in cold water; add a pinch of cream tartar, and stir in 1 cup of shelled peanuts; finish as directed for hoarhound candy.

Butternut Balls.—Take some butternuts or bechnuts, pound them very fine in a mortar, and add a little allspice and nutmeg. Make a frosting as for cakes, and stir in enough of the mixture to make it thick enough to handle. Grease the hands, form this mixture into balls, and set on greased tins, allowing room for them to spread as they dry.

Fig Candy.—Take $1\frac{1}{2}$ cups water and 1 lb. coffee A or granulated sugar; boil until it is brittle when dropped in cold water; add 1 teaspoon each of butter and vinegar, and pour it into greased pans on which slices of figs have been laid; put slices on top also.

Crystallized Popcorn.—Take 1 teacup coffee A or granulated sugar, 3 tablespoons of water and 1 tablespoon of butter; boil to the "hard ball" degree, and then throw in 3 quarts of nicely popped corn; stir briskly until the candy is evenly distributed over the corn; take the kettle from the fire (be careful the corn does not burn) stir until it cools a little, and each grain will be separated and coated with crystallized sugar.

Nut meats of any kind may be crystallized the same way.

Crystallized Cherries.—Prepare the sugar and bring it to the "hard ball" degree as directed for crystallized popcorn, and then pour it over some fine ripe cherries which have been stoned; move them about gently, to coat them nicely, and when almost cold, dry them in a cool oven or near the fire.

Popcorn Balls.—Sort all the hard kernels out of popcorn; then take the amount of molasses needed, and boil it until it will hair or thread off the end of a spoon (the "feather" degree); pour the hot molasses over the corn, mix well, and make into balls as soon as it cools a little, having the hands well greased.

Corn-cake can be prepared by putting the mass while warm into greased tins, pressing it into thin sheets with greased rollers and afterwards cutting it into small square cakes.

Ratafias.—Use $\frac{1}{2}$ lb. of sweet almonds, $\frac{1}{4}$ lb. bitter almonds, 2 cups granulated sugar, whites of 4 eggs. Blanch, skin and dry the almonds; then pound them in a mortar with the white of 1 egg; then stir the sugar in gradually, and add the remaining whites of egg; beat thoroughly, and drop on tins covered with writing or cartridge paper, and bake about 10 minutes in a quick oven. The ratafias should be about the size of a large button when done, and as they spread very much in baking only a very little of the paste should be allowed for each one. Have them far enough apart on the paper so that they will not touch as they swell in baking.

White Candy.—Take 2 cups granulated sugar, 1 cup water, and 1 tablespoon of vinegar; boil without stirring until it is brittle when dropped in cold water; pour into greased pans, and pull when cool enough, adding vanilla flavor as you pull it; form it into sticks, and set in a cool place till the next day.

Crystallized Nuts.—Select the finest nuts and lay them in well-beaten white of egg, drain them, and again beat what white of egg drips off; then dip them one by one into powdered sugar; lay a sheet of fine paper on a pan, place the nuts on it, and set in a cool oven; when the icing becomes firm, pile them on a dish, and keep in a cool, dry place.

Crystallized, Iced or Frosted Fruits.—Select ripe, perfect fruit, and dip it in the well-beaten white of egg to which a little cold water has been added, or into thin gum arabic water; then put it on a sieve and sift on pulverized or fine granulated sugar; or roll the fruit in the sugar; let it dry a little, and roll again, laying it on oiled paper to dry. Keep it in a cool, dry place, until ready to arrange it for the table, as dampness may make it sticky.

Currants, cherries, grapes, plums, peaches, or other fruit, may be thus prepared, and it is very attractive for the tea-table or dessert. Leave grapes or currants on the stem; and brush the fur off of peaches before frosting them.

Orange Peel, Candied.—Use thick peel and cut it in thin strips, then boil it, frequently changing the water until there is no bitter taste in the water (don't be alarmed at the amount of boiling required); drain thoroughly, then put in a kettle with sugar only in proportion of 1 cup to the peel of a dozen oranges. Set the kettle on the back of the stove, and stir occasionally while the sugar dissolves and the peel becomes candied and dry. Keep in a glass jar. Used instead of raisins in cake it gives a daintily-flavored fruit cake.

FRUITS.

A great variety of fine fruits abound in our markets which in their season are cheap and easily obtainable. They may be considered as luxuries, because no fruit is essential to life, but they afford a pleasing variety to bills of fare, and they possess some value in themselves. While most highly prized by the inhabitants of warm countries they are craved and procured by those of temperate climates, often even at much expense. Fruit may be profitably eaten at least once a day. The juice, consisting largely of watery solutions of acids and sugar, is the most enjoyable part, and those varieties containing the most juice with the least cell structure are the most highly prized. Although judged by their chemical composition, their food value is not large, fruits act beneficially on the system, when fully ripe and eaten in moderation, as they improve the appetite and promote a healthy condition of the vital organs.

Nuts do not form a very important article of diet among any people with the exception of the cocoanut. Although judged solely by their chemical composition they should be very nutritious, they are difficult of digestion and are valuable principally for the oil which they contain.

The following table will show the composition of the principal fruits. The "potential energy" in most fruits is rather low, being 175 Calories to the pound in strawberries; 200 for pineapples; 210 for lemons; 320 for apples; 640 for bananas; and 160 for watermelons.

TABLE SHOWING THE PERCENTAGE OF FOOD ELEMENTS IN DIFFERENT FRUITS, ETC.

	Water. %	Albu- menoids. %	Free Acids. %	Sugar. %	Fats. %	Other non-ni- trogen- ous sub- stances.	Mineral Matters. %
Apple	83.5	0.4	1.0	6.8	0.0	8.4	0.4
Apricot	81.2	0.4	1.1	5.0	0.0	11.5	0.8
Banana (peel'd)	74.0	4.8	0.0	15.6	0.6	4.2	0.8
Blackberry	86.3	0.5	1.2	4.5	0.0	7.0	0.5
Cherries	80.2	0.6	1.0	10.2	0.0	8.0	1.0
Cocoanuts	46.6	5.5	0.0	8.0	35.0	3.9	1.0
Currants	84.0	0.5	2.0	6.5	0.0	6.3	0.7
Dates	20.8	6.6	0.0	53.0	0.2	17.8	1.6
Figs	17.5	6.1	0.0	57.5	1.0	15.6	2.3
Gooseberry	85.7	0.5	1.5	7.0	0.0	4.8	0.5
Grapes	78.0	0.7	0.8	15.0	0.0	5.1	0.4
Mulberry	85.0	0.5	1.8	9.0	0.0	3.1	0.6
Peaches	85.0	0.5	0.7	1.8	0.0	11.4	0.6
Pears	84.0	0.4	0.2	7.0	0.0	8.1	0.3
Peanuts	7.5	24.5	0.0	0.0	50.0	16.2	1.8
Plums	82.0	0.8	0.8	6.0	0.0	10.7	0.7
Raspberry	86.0	0.5	1.3	4.0	0.0	8.2	0.5
Rhubarb	95.1	1.0	0.3	1.8	0.0	1.3	0.5
Strawberry	87.5	1.0	1.0	6.2	0.0	3.5	0.8
Walnuts	44.5	12.5	0.0	0.0	31.6	9.7	1.7

The most wholesome and nutritious fruits are the bland varieties, like apples, grapes, pears, strawberries, and gooseberries, although the latter, as well as currants and raspberries, are less wholesome than the others. Stone fruits are apt to disagree with the stomach, but the more watery, like peaches and large plums, are better than those which are smaller and drier, like apricots and damsons. Bananas are wholesome. The skin of fruits, and the cellular parts in general, are not readily digested. The pulp of oranges renders them heavy.

Fruit may be eaten with a meal or on an empty stomach. The quantity which should be taken depends on the kind. A healthy person may now and then eat the bland, nutritious fruits, as freely as any other wholesome food, but, as a rule, he will gain most if he eats but little, and takes it regularly. Whatever fruit is eaten uncooked, must be fully ripe, but not over-ripe. When eaten with a meal, fruit promotes digestion by its gently irritating effect on the mucous membrane of the stomach and intestine. For a laxative effect it is best eaten in the early morning before breakfast, or between meals. Among the laxative fruits may be mentioned oranges, figs, tamarinds, prunes, mulberries, dates, nectaries, apricots and plums. In the early morning an orange acts very decidedly as a laxative, sometimes amounting to a purgative, and may generally be relied on. Pomegranates,

cranberries, blackberries, sumach berries, dewberries, raspberries, barberries, quinces, pears, wild cherries, and medlars are astringent. Pomegranates are very astringent, and relieve a relaxed throat and uvula. Apples are correctives, useful in nausea and the vomiting of pregnancy; they at once relieve the nausea due to smoking. Grapes and raisins are nutritive and demulcent, and very grateful in the sick chamber. Among the fruits which act as diuretics are, grapes, peaches, strawberries, whortleberries, prickly pears, black currants and melon seeds. Lemons, limes, apples, gooseberries, red and white currants, pumpkins and melons are refrigerants.

Cooking removes much of the acidity from unripe fruit, and renders it lighter as well as more palatable. The acid of unripe fruit acts as an irritant poison, causing an excessive intestinal secretion with more or less irritation, and hence arises the resulting diarrhoea. On the other hand, fruit which is over-ripe, in which fermentation has begun, frequently causes the same disorder, and should be equally avoided, although less easily avoided because the insidious beginning of decay is not easily recognized.

The pleasant flavor of many of the fruit sauces depends on blending the acids which fruits contain, with sugar, and much of the success of the various cooking operations in which they are used depends on the proper combination of these elements. If the acid was neutralized, as might easily be done with an alkali, the piquancy would be gone, and the product would taste insipid and flat. The aim, therefore, is not to wholly neutralize the acid, but merely to blend it agreeably with sweetening.

FRESH FRUITS:

Serving Fruit.—Fruit for the table should be selected with care, and choose only that which is ripe and perfect. In arranging it for the table there is an opportunity to display one's taste and ingenuity. The garnishing requires attention. Arrange the fruit tastefully on dishes, with leaves between and around it, as the contrast of brilliantly colored fruits with nicely arranged foliage is very charming. The double-edged mallow, strawberry and vine leaves have a pleasing effect, and in winter the bay and laurel are sometimes used. For the breakfast table melons, oranges, and small fruits are generally served, but for the dinner table all fruits are served in their season. Serve whole fruit in a raised dish, blending the colors harmoniously, and mix in any pretty green leaves or vines. Arrange them conveniently for serving, and so that they will not fall out when moved.

Have fruit fresh, and as cold as possible when served. That which has stood for some days in a warm room is not very tempting. Pounded ice is an agreeable addition to a dish of raspberries, strawberries, or currants. Pound it in a clean cloth until it is almost as fine as snow, and then spread it over the berries. If sliced fruits or berries are sprinkled with sugar and allowed to stand 1 or 2 hours before serving, they will be much improved.

Grape scissors, a melon knife and fork, and nutcrackers should always be put on the table if there are dishes of fruit requiring their use.

There are many very attractive ways of preparing fresh fruits for desserts, etc., which we explain elsewhere, such as "Frozen Fruit," "Frosted or Iced Fruit," "Glaces," "Cream-Coated Fruit," "Fruit Molds," "Fruit Ice Creams," etc., which the reader can readily refer to.

Apples.—Choose those which are not too sour, and which have a pleasant taste; wipe them clean, or polish brightly with a cloth, and mix together different colors, like red and yellow, piling them up on a dish.

The Apple belongs to the rose order. The cultivated varieties have sprung from the wild apple or crab. This delightful fruit is made very wholesome by baking or boiling. The acid is mainly malic. The hard acid kinds are unwholesome if eaten raw, but by cooking, a great deal of their acid is decomposed and converted into sugar. A large part of its acid is turned to sugar as the fruit ripens, or even after it is gathered, by the process of maturation. When apples decay, the sugar is changed to a bitter principle, and the gum becomes moldy and offensive. Old cheese has a remarkable effect in mellorating the apple when eaten with it, probably from the volatile alkali or ammonia of the cheese neutralizing the acid.

Apricots.—These need only a few green leaves to garnish them. Pile them high on a glass or other dish.

The Apricot is a native of Armenia, and belongs to the same species as the plum. Its delicious fruit much resembles the peach. It only keeps a short time, and is either eaten fresh or is made into preserves or jelly. It has sometimes been condemned for its laxative qualities, but this may have been caused by eating the fruit when unripe, or in too great quantities. Delicate persons should use a liberal quantity of powdered sugar with them if they eat them uncooked. The kernels are sometimes used for the same purposes as almonds. Apricots contain rather less water, and more sugar and pectine than peaches.

Bananas.—These, if whole, should be piled on either high or low dishes, and high in the center, with bright green leaves to make them look pretty. They are often mixed in with oranges and grapes. Bananas make a delicious dessert if the skins are taken off, and they are cut crossways into thin slices, and then sugar and cream served on them. Or, after slicing them, sprinkle on sugar and add a little orange juice. Alternate layers of bananas and oranges (peeled and sliced) with sugar on each layer are very nice. It will be an improvement to let the fruit get very cold, and cover with whipped cream when serving. Bananas and strawberries also go well together.

The Banana grows almost everywhere in the tropics. It is really a variety of the plantain, and is very much like it. It is a nutritious food, and contains less water and more nitrogenous matter than most fresh fruits. It is always eaten ripe, and then contains much sugar, but little starch. A pound of bananas contains as much nutriment as 3 lbs. of potatoes, and there is every reason to encourage their more extensive use.

Berries.—Choose the freshest. It is better not to wash them unless they need it, but pick them over, hull them, spread a layer in a dish, sprinkle with sugar, then put in another layer of berries, and so on alternately. Set them in a cold place until ready to serve, and then put on a layer of crushed ice. If necessary to wash them, use cold water, wash a few at once, and then hull them, handling as little as need be. Do not stir them with a spoon nor drain them in a colander. Then sprinkle with sugar and set away as before. Do not wash berries after being hulled, as more or less juice escapes with the hulling, and the less they are then disturbed the better.

The Blackberry is a fruit which well repays cultivation, and is now found in its season in all principal cities and towns. The root is astringent and is used to check diarrhoea. The composition of the berry has been previously given. It is wholesome and belongs to the order *Rosaceæ*. The *Mulberry*, *Dewberry* and *Raspberry* belong to the same species, and their composition and properties are very similar.

The Huckleberry or *Whortleberry*, is native to the Northern parts of the world. It is wholesome and contains 77% water; 5.7% sugar; 1.3% free acid; 0.7% albumenoids, and 0.5% mineral matters. The *Blueberry* and *Bilberry* belong to the same species and are similar in composition and properties.

Cherries.—These can be piled in rows and high like a pyramid.

The Cherry as a cultivated fruit tree is generally supposed to be of Asiatic origin. It belongs to the rose order. It bears a sub-acid fruit which is wholesome, cooling, laxative and antiscorbutic, but if not fully ripe should be eaten cautiously, as it has a tendency to disorder the bowels. Its acid is principally malic.

Cocoanuts.—These can be grated, and served with either cream or jelly as preferred, or both can be used; or serve them with jelly or jam.

Cocoanut is the fruit of a species of palm. It now grows in nearly all tropical regions. The number of different ways in which it is made useful to the inhabitants in the region in which it grows is surprising. Each tree yields 80 to 100 nuts annually. The oil expressed from the kernel is good, and might be used as food, but it quickly becomes rancid. The nut should be eaten moderately only, as it is rather difficult of digestion alone, but in connection with other food aids their digestion. It is more of a heat-giver than of a flesh-former.

Currants.—When fully ripe these are delicious and attractive in appearance. Mix together the red and white on bunches, in alternate rows, with leaves bordering the outside; or pick them from the stem and sweeten them. They are delicious served with raspberries.

The Currant is supposed to be a native of Northern Europe, and did not attract much attention till within the last 100 years. It is not mentioned by the ancient Greek and Roman writers. The red, white and black, all belong to the same species as the gooseberry, and their composition is nearly the same. It is a wholesome and useful fruit. Its acid is principally citric and malic.

Zante Currants are not really currants at all; they are small grapes grown in Zante, which is an island near the Western coast of Greece. They are cultivated on an immense plain under the shelter of mountains, and when gathered and dried in the sun and air they are stored in magazines until ready for shipment. Zante produces about 9,000,000 lbs. of these currants annually. Zante currants are rather indigestible.

Dates, Figs, French Plums, etc.—These are all served on small glass plates or oval dishes, piled high in the center. Garnish them with green leaves.

The Date is the fruit of a palm tree. It bears bunches, weighing perhaps 25 lbs. with 200 dates. It grows extensively in Persia and throughout Asia and Africa. More than half its weight is sugar. It is a gentle laxative, and is in many cases to be preferred to figs.

Dates can be used in pies, cakes, puddings, bread and sauce, and they are worthy of a more extensive use, although many people do not understand how to handle them.

Ripe Figs.—Peel and slice fresh figs, and serve with pulverized sugar and cream.

The Fig is a native of Persia, Asia Minor, etc. The common fig in its native land bears 2 crops a year. The figs of commerce come mainly from Turkey and the countries bordering on the Mediterranean. The fruit contains about 57 per cent. of sugar, and is wholesome and nutritious, but the seeds are indigestible, and sometimes have an irritant action on the bowels.

Gooseberries.—These should be piled high, but need no other arrangement, except a few green leaves for decoration.

The Gooseberry belongs to the same order of plants as the red and black currants. It does not appear to have been known to the ancients. The name is by some thought to be a corruption of the Saxon *gorst* (gorse-berry, meaning rough-berry). The skin is very indigestible. The acid is principally citric and malic. Red gooseberries contain more acid than the white, but when that is masked with sugar they are most wholesome. The red variety makes an excellent jelly which is light and refreshing, and is good for bilious and plethoric persons, and invalids generally who need light and digestible food, but it is not very nourishing.

Grapes.—Examine these carefully, and pick out all which are withered or unsound. Rinse them in cold water, Malagas especially. Have the bunches of medium size, dividing the large ones. They can be piled in a pyramid, with a few hanging over the side of the dish. Different kinds mixed look well, by the contrast of colors, and their own or other green leaves can be placed at the edge of the dish. Divide the bunches with fruit scissors.

Grapes of all varieties are mostly natives of tropical and semi-tropical regions. Some varieties are dried and sold as *raisins* and *currants*. Fresh, ripe grapes, contain much sugar, sometimes nearly 20%, and the acid is chiefly tartaric, part of which is combined with potash. All grapes are nutritive and wholesome, but they are subject to fermentations, and when eaten immoderately sometimes bring on colic. In moderation they may be safely eaten even by invalids, and are refrigerant, diuretic and laxative.

Melons.—These should be very cold when served, and are best kept on ice a few hours before serving. They may be cut in strips and piled up on a platter, or merely cut crossways. The ice should not be allowed to come in contact with the inside of the melon. Eat with a spoon or fork. They are eaten alone, or with salt, sugar or pepper, sprinkled on.

Cantalopes.—Chill by keeping them on ice before serving; cut them in two, remove the seeds, and serve a half to each person. Serve salt with them. Eat with a spoon.

The Melon belongs to the gourd tribe. It has never been found in a wild state, but is supposed to be a native of the sub-tropical parts of Asia; it is properly the fruit of a hot climate. It was originally named the musk melon. The watermelon although less sweet than the muskmelon is more juicy. There are many varieties, but all are wholesome. In their season melons are beneficial because of their action on the kidneys, but they should not be eaten unless of good quality and fully ripe. The composition of watermelon is 92% water; 6% carbohydrates; 1% albumenoids; 0.7% fat, and 0.3% mineral matters.

Olives.—These can be most attractively served by draining them and putting them in a small fancy dish on a bed of broken ice, with a small silver fork in the dish. They are served at dinners, lunches and suppers, and are placed on the table at the beginning of the meal and are left until it is over. If they are too salt let them soak in cold water an hour before serving them. On taking them from the table put them in a bottle of slightly salted water, covering them completely to keep them from darkening in color.

The Olive tree is a native of the south of Europe. The fruit is valuable in its ripe and unripe state. Unripe olives are pickled in various ways, being usually pickled in lime water which renders them softer and milder in taste. They are eaten to destroy the taste of viands previously eaten, and to promote digestion. The well-known olive oil is obtained mainly from the external part of the ripe fruit.

Oranges.—These may be served whole, piled up like a pyramid or mixed in with bananas and grapes. If served whole they can be cut in two crossways, without peeling them; then eat with a spoon, sprinkling on sugar or not as preferred. Or they can be served cut in halves, and laid on green leaves; or with

the peeling cut and rolled down. Or they can be peeled, divided into sections, the seeds taken out and each one cut in 3 pieces with a silver knife; then sprinkle on sugar just before serving. In Havana a fork is run into the orange from the stem end, which serves as a handle; then with a sharp knife the peel is cut in strips and turned down from the top, and the orange is eaten, which leaves the fibrous pulp on the fork.

Oranges and Cocoanut.—Peel and slice oranges, put a layer in a glass dish, sprinkle on white sugar and add grated or desiccated cocoanut, then another layer of oranges, and so on, ending with sugar and cocoanut on top. It should be prepared in the morning, and left in a cool place until tea time, or on ice. A glass of lemon and orange juice mixed and poured over all, will be an improvement.

The *Orange* belongs to the *citrus* family, to which the citron, lime, shaddock, pomaloc, etc., belong. They are all characterized by varying quantities of citric acid, citrate of potash and sugar in their fleshy parts. The peeled fruit contains about 86% of water, 8 to 10% of sugar, and small quantities of citric acid, albumen, cellulose, etc. In buying oranges remember that the sweetest ones have rough, reddish skins, while those with a thin, light yellow skin, will be more juicy, but also more acid. They are not ripe when picked if they have a greenish tinge. Oil of neroli is obtained from orange flowers. The fruit is quite wholesome.

Peaches.—These should have the fur wiped off, but any other garnish than a few green leaves is superfluous, as their own color is so rich. They make a beautiful center dish. Or they can be pared, sliced, granulated sugar sprinkled on, and served at once, and cream passed for them. Some people think it an improvement to grate nutmeg over sliced peaches. Try it. Or they can be frozen or frosted by the methods we explain elsewhere, and made very attractive.

The *Nectarine* can be treated like the peach.

The *Peach* tree belongs to the Rose order, is a native of Persia and greatly resembles the almond-tree. All the varieties are divided into 2 classes—"freestones" and "clingstones," the former being the best. Too much down on a peach is a sign of inferior quality. Although a delicious fruit it contains little nutritive matter. It contains little sugar, but the malic acid it contains is masked by its pectose. The skin is indigestible. Its acid is principally tartaric. The kernels of peach stones yield an oil identical with that of bitter almonds.

The *Nectarine* is only a variety of the peach.

Pears.—Wipe them with a cloth, and pile them high like a pyramid, with a few green leaves at the base. For eating, select fine grained pears.

The *Pear* belongs to the same order as the quince and the apple, and is one of the most valuable fruit trees of temperate climates; there are about 150 varieties, but none of them keep as well as apples. They are perfectly wholesome when ripe, but not when green, although they may then be stewed. A fermented liquor called *perry* is made from the pear. Its acid is tartaric principally.

Persimmons.—When dead ripe the skin will be so tough that the calix may be pulled out, and then the delicious contents may be taken out with a spoon, but it is very astringent unless *fully* ripe.

Persimmon is the fruit of the *Diospyros virginiana*. It grows in the Southern States, but is seldom found north of 40°. When green the fruit is very astringent, but when ripe, or when mellowed by frost, it is sweet and luscious. By a course of cross fertilization and selection the Japanese are said to have brought this fruit to great perfection.

Pineapples.—A handsome center-piece is formed with a pineapple surrounded with oranges and grapes. A pineapple may be pared, and then holding it by the tuft, use a sharp knife and start the fruit in thin slices and tear each piece from the hard central core; then cut them into small pieces, add sugar and allow it to stand in the refrigerator some time before serving, to form juice. Another way is to cut off the tuft, then cut the pineapple into quarters lengthwise; take out the hard core, and grate off the fruit until the rind is reached. Pineapple forms a good dessert served with lady-fingers or slices of sponge cake in a row around the dish. The "strawberry" is considered the best, and the "sugar-loaf" next. It is also nice served in alternate layers with cocoanut and oranges, with sugar between the layers; after preparing, set it in the refrigerator till ready to serve.

The rind of pineapple contains an acid which will make the lips and mouth sore if it gets on them; therefore, peel it with one knife, and slice it with a clean fresh one. Salt is used as an antidote for the acid if it gets on the lips.

The Pineapple is a native of South America, but has been naturalized in many semi-tropical countries. The fruit is eaten fresh, and although the taste is delicious it is not very digestible. It is very perishable. It contains little nutrition, having 89% of water, 9% of carbohydrates, 0.4% albumenoids, 0.3% fat and 0.3% mineral matters. When eaten uncooked they are best if prepared and placed on ice 2 or 3 hours before being served.

Pomegranites.—Remove the skin, take out the seeds, and carefully remove all the thin brown skin separating the sections; mix the seeds with finely pounded ice on a pretty dish, and serve.

Pomegranite is native to Asia and probably Africa. It has never come into very extensive use in Europe or America. The pulp has a delicate pleasant flavor, and its sub-acid juice makes it cooling and grateful in warm climates. The rind is very astringent (caused by the tannin it contains) and a decoction of it makes a good gargle for sore throat, and is good for diarrhœa.

Tamarind.—This is a native of the West Indies, but is cultivated in warm climates. The pulp contains citric, tartaric, and malic acids, with potash, sugar, etc. It is refrigerant and laxative. Tamarinds are best preserved by putting alternate layers of tamarinds and sugar into a stone jar. That sold in the market is often adulterated with copper. It may be detected with a piece of polished iron or steel, as directed for pickles in the chapter on the "Adulteration of Food."

Plums.—Pile these in pyramidal form. A pretty effect is produced by adding sprays of nasturtium leaves and blossoms.

The Plum has been cultivated from ancient times, and the first fine varieties were probably introduced into Europe from the East, the *Damson* or *Damascene* taking its name from Damascus. When perfectly ripe the best varieties are wholesome. Some varieties are too astringent, though by baking they lose much of their bad qualities, and are used in tarts and preserves, but they should be used with moderation. If eaten unripe, they are almost sure to cause diarrhœa. They are not very rich in sugar, but contain much pectose or vegetable jelly, which gives them their gelatinizing quality.

Greengages are a variety of plum, although not the largest in size; for delicacy and richness of flavor they are unsurpassed, and are generally esteemed as one of the finest varieties.

Prunes are simply dried plums. They are often used for their laxative effect by persons subject to habitual constipation.

The Sloe is the parent of the plum. The leaves have been used to adulterate tea. The juice is sharp and astringent, and the fruit, when ripe, makes good preserves.

Raisins.—Serve only the choice varieties on the table like the loose "Muscatels" or layer raisins. They may be served with candy and nuts, or almonds are sometimes blanched and strewed over them.

Raisins contain more sugar and less acid than fresh grapes, and so are more nutritious but less refrigerant. If eaten too freely they are apt to derange the digestive organs.

Raspberries.—If very large and fine they are sometimes piled in rows in pyramidal form. Otherwise merely pile them in the center of the dish with a few green creepers about the edge. Some people prefer them with little or no sugar. Or prepare them as directed for "berries."

The Raspberry in some forms is found throughout Europe and America. There are 2 kinds—the red and white, the former being most common. The juice is very wholesome, and valuable to people of a nervous or bilious temperament.

Strawberries.—Serve as directed for berries. Large fine berries are served by the French without hulling; each one is taken by the hull and dipped into powdered sugar, which is passed with them, and then eaten. They are also nice put into a dish in alternate layers of berries and sugar; then whip together 2 cups cream, 1 cup of pulverized sugar and the whites of 3 eggs; flavor with strawberry or orange juice, and put it on top of the berries. Another way is to put alternate layers of berries and sugar in a dish; then take orange juice in the proportion of 3 oranges to 2 pints of berries, pour it over, and set the dish in a cool place for 1 or 2 hours. Sprinkle pounded ice on them just before serving.

Mock Strawberries.—Use 1 part apples to 3 parts peaches; select choice, ripe fruit, and pare, core, and cut it into blocks about as large as strawberries; put them in a dish in alternate layers, spread sugar thickly on top, and spread on crushed ice; let stand 2 or 3 hours, and then thoroughly mix up the apples and peaches; serve after it has stood 1 hour more.

The Strawberry was known to the ancient Greeks and Romans, and is indigenous in all temperate climates. It does not contain much nutritive matter, but is very wholesome. The seed-like pericarps are not easy of digestion and sometimes cause intestinal irritation on which account some physicians have recommended passing them through muslin before being eaten. They have more water in their composition than gooseberries or currants, and they are cooling, laxative, and slightly diuretic. Some epicures grate the zest of an orange over them, thinking it improves the taste, especially when a little sugar is added also.

Nuts.—If served with the shells on they should be wiped. They are merely piled high in the center of the dish with or without green leaves around the edge. It is best to crack them, however, and serve them with salt. Nuts with a tough skin, like almonds, should be blanched. Almonds, filberts, Brazil-nuts, hickory-nuts and walnuts, go well with raisins. Nut crackers should always be provided if any of the nuts are uncracked.

Tutti Frutti.—Prepare a cocoanut by opening the 2 eyes and letting out the milk which must be strained and kept; break the nut with a hatchet, or saw it in two, take out the meat, peel off the brown skin and grate. Cut 2 bananas in quarters lengthwise, and then cut in slices. Have ready a chopped pineapple, a pint of strawberries or raspberries, and the grated rind and juice of 1 lemon and 1 orange. Put a layer of the fruits and nut in the bottom of a glass dish, then a layer of granulated sugar, then another layer of fruit and so on until the dish is full. Pour over all, the milk of the cocoanut and the juice of the lemon and orange. Dip from the bottom when serving.

DRIED FRUITS.

Many people do not appreciate the value of dried fruit. A large part of the water evaporates when the fruit dries, and the nutritive portions are left in a more concentrated form. The percentage of nutritive elements in dried apples approaches that of bread, but one great drawback to the use of dried fruit is that as ordinarily dried many fruits lose much of their peculiar and delicate flavor. Many of the fruits are readily and easily dried and can thus be kept for future use. Cherries and peaches are (next to apples) about the best of the dried fruits.

Fruits like apples, etc., can be dried by putting them on a kind of sieve-like holder, and submitting them for $3\frac{1}{2}$ hours to the action of a cold air blast. Thus dried they are superior to fruits dried by the sun or hot air.

The new process of preparing fruit by evaporation has overcome many of the objections to the old fashioned dried fruit, and its sale has increased enormously. It is probable that the sale of evaporated fruit will in the near future partly or possibly largely supplant canned fruit in the market, as it possesses many advantages. It is healthful and its use desirable.

Fruit which is to be dried should be ripe and sound. It should be spread in a single layer on boards or in shallow boxes. Insects may be kept away by covering it with mosquito netting. Keep it spread in the hot sun until it is fully dry, as indicated by its turning dark; never set it out in damp or cloudy weather, and always bring it in before sunset, to prevent the dew from falling on it. The oven is an excellent place to dry any fruit, as it dries more quickly, and is not so much exposed to insects; but do not let the oven become hot enough to scorch the fruit at all. Fruits are still further preserved often by the use of sugar, as in some of the recipes which follow.

Keeping it.—Dried fruit should be kept in a cool, dry place, away from the light, tightly tied in thick paper bags, or in closely covered jars. By turning it occasionally into a tin pan and setting it in a hot oven for a few minutes, and then tying it in the bags again, there will be no trouble with worms, but to reheat it thus, injures its flavor and makes it dark colored. Security against moths is secured by using paper sacks, tightly tied, or a box or barrel lined with paper. To avoid frequent opening of large packages it is best to keep a small quantity on hand in fruit jars. It is sometimes advised to scatter sassafras bark among dried fruit to keep away the worms; but its flavor will spoil the fruit for many people, so that it is better not to use it.

To cook dried fruit let it soak a few hours, or over night, in soft water, and it will then need less boiling; then slip it carefully into an aluminum, earthen, granite or porcelain-lined sauce-pan, and cook it in the same water until done, thus keeping it in shape; it is best not to add the sugar for sweetening until about 5 minutes before taking it from the stove. Another good way is to drain the water off when soaked, add sugar to make a syrup, let it boil up, turn in the soaked fruit and cook until tender; it equals canned fruit when thus cooked.

Dried Apples.—The apples should be pared, cut into slices, and dried in the sun or the oven as above explained.

Pears and Quinces can be dried the same as apples.

Apples, to Skin.—By pouring scalding water on apples the skin may be easily slipped off and much labor in paring them saved.

Dried Blackberries.—The cheapest way to preserve them is to carefully dry them in the sun as you would apples. Thus preserved they make excellent pies. Keep them in a dry, cool place.

Dried Cherries.—(1) Cherries may be put into a slow oven and thoroughly dried before they begin to change color. They should then be taken out of the oven, tied in bunches, and stored away in a dry place. Particular care must be taken that the oven is not too hot. (2) Another method is to take the stones and stems from ripe cherries; spread them on flat dishes, and dry them in a warm oven or the hot sun; pour whatever juice may have run from them, a little at a time, over them; stir them about, that they may dry evenly. When they are perfectly dry, line boxes or jars with white paper, and pack them close, in layers; strew on a little brown sugar, fold the paper over, and keep them in a dry place. (3) Another plan for cherries is to take equal quantities of cherries and sugar; boil the sugar to a caramel; have the cherries stoned, throw them into the caramel, and let them cool. Then take them out and put them in a sieve to dry, in a slow oven, watching them carefully.

Dried Citron.—Pare and quarter it, and boil it in water until it is clear, and so tender that a broom-straw will readily penetrate it; then have ready a syrup of sugar and water, drain the citron, and boil it in the syrup until the sugar permeates it; then dry it slowly, spread out on dishes, turning it occasionally, and sprinkling on powdered sugar several times. When sufficiently dried, pack it in alternate layers of citron and sugar, in boxes and jars. It can be used for cakes, etc.

The Citron belongs to the same genus as the orange and lemon. It is a native of India, but is cultivated in all orange-growing countries. It is acidulous, antiseptic, and antiscorbutic and has been recommended for chronic rheumatism, gout and scurvy. It is not unsuited for eating in its natural state, and the juice mixed with water and sweetened forms an excellent drink. The prepared rind or peel is much used for cooking and confectionery.

Dried Currants.—Put alternate layers of currants and sugar in a jar, using 1 cup of sugar to each pound of currants; let stand until the next day, and bring them to a boil, and boil $\frac{1}{4}$ hour; skim them, and then dry in a slow oven or the sun, spreading them out on plates. They serve well in pudding or pies instead of raisins. Keep them in paper bags, or in stone crocks well covered, or pack them in sugar in glass jars.

Dried Gooseberries.—(1) To 7 lbs. of red gooseberries, add $1\frac{1}{2}$ lbs. powdered sugar, which must be strewed over them in the preserving pan; let them remain at a good heat over a slow fire until they begin to break; then remove them; repeat this process for 2 or 3 days; then take the gooseberries from the syrup, and spread them on sieves to dry. The syrup may be used for other purposes. When the gooseberries are quite dry, store them in tin boxes on layers of paper. (2) They

are sometimes dried in a moderate oven or the sun, without the sugar, as directed for cherries. Select firm, ripe fruit.

Dried Peaches.—(1) Take free-stone peaches, cut in halves and place them on plates, hollow side up; fill the hollows with granulated sugar, and place in a slow oven, or in the sun, if the weather is fine, until they are half dry; then pack them in glass jars, hollow side down; first a layer of dry sugar, then a layer of peaches mashed flat with the small end of a potato masher, then layers of sugar and fruit until the jar is full, having a layer of sugar on top. Screw on the covers, and keep in a cool, dry closet. (2) Another way is to put well-ripened peaches in boiling water for 1 or 2 minutes—a whole bushel can be put in the boiler at once; then turn off the water and the skins can be more easily and quickly removed, they can be stoned easier, they will dry quicker, and are better when dried. Dry them, sprinkled with sugar, in a moderate oven or in the sun. (3) They can also be dried without removing the skins, but the fur should be well rubbed with a piece of flannel; then dry like apples.

Peach Chips.—Use 1 cup of sugar to each lb. of fruit; boil the sugar in water enough to dissolve it, until it becomes very thick; then put in the peaches, which should be peeled and sliced, and scald them well; then take them out with the skimmer and dry in the sun. When dry, pack closely in jars in layers, with powdered sugar between each layer. The syrup left can be bottled, and used in pudding sauces, blanc manges, etc. The chips can be used in puddings instead of raisins.

Dried Pineapple.—Pare and slice the fruit thinly, put it on dishes, and strew on it a plenty of powdered sugar; keep it in a very slow oven 8 or 10 days, and turn the fruit every day until dry; then put the pieces of pineapples on tins and place them in a quick oven for 10 minutes. Let them cool, and store them away in dry boxes, with paper between each layer.

Dried Plums.—These need not be pared; rub the skin thoroughly with a piece of flannel, and dry in the sun or an oven, like apples.

Dried Watermelon Rinds.—These can be dried in the sun after being preserved, and they can be used instead of the imported citron for cakes and puddings, answering very well.

COOKED FRUITS.

Baking, stewing and frying are the simplest and easiest ways of cooking fruit. Do not pare the fruit long before cooking it, or it will discolor by exposure to the air, and its delicate flavor will be impaired. Cook it in aluminum, earthen or porcelain kettles, and use earthen dishes, silver or aluminum knives and wooden spoons, as iron or pewter spoons may cause discoloration. It is better not to prepare a great deal of stewed fruit at once, as it does not keep long. Only a little sugar is needed.

Using Sugar.—Many cooks do not understand the use of sugar in cooking fruit. The sugar in ordinary use is cane sugar, and is $2\frac{1}{2}$ times as sweet as grape sugar, but is closely allied to it, as we have explained elsewhere. Cane sugar can be changed to grape sugar by cooking it with acids and thus its sweetening power will be reduced to that of grape sugar. Some cooks put their sugar in with a mass of acid fruit to be cooked, and keep cooking and adding sugar as the mass gets sweeter, until at last they use $2\frac{1}{2}$ times as much sugar as they need to do, because the cane sugar becomes changed to grape sugar. If the sugar had been added after the fruit was cooked, much less would have been required, and the result would have been far more satisfactory. By bearing this in mind a large saving can be made in the use of sugar. Many people misapprehend the effect of sugar on the acids of fruits. Enough sugar can be added to disguise the *taste* of the acid, but it does not neutralize it as an alkali would do, nor does it effect any chemical change in the acid whatever.

Baked Apples.—Wash sour apples, wipe them dry, and remove the cores; fill the holes with sugar, and add a little spice and a piece of butter on each apple; put $\frac{1}{2}$ cup of hot water in the pan and bake the apples until tender. Serve with sponge cake. If preferred, a little grated lemon peel can be mixed with the sugar instead of the spice and butter; baste often with the syrup as they bake. Baked apples served with or without flavored milk, are delicious.

Baked Apples and Oranges.—Take 6 good sweet apples; remove the blossom end, pare, and put in a baking-pan; sprinkle on 1 small cup sugar. Invert a pan over them, and bake until tender; let them cool in their own juice, then pile high in a glass fruit dish; pour the sweetened juice and pulp of 3 oranges over them, and sprinkle on the grated yellow rind.

Boiled Apples.—Take 12 good whole apples; put them in a stew-pan and pour on 2 cups boiling water; boil until soft, and sweeten on taking them from the stove. Serve hot or cold—best cold.

Apple Butter.—Boil new cider down $\frac{1}{2}$; then add an equal quantity of apples which have been pared, quartered and cored; boil until the apples are tender, and then sweeten with light brown sugar, and boil, with constant stirring, until it is reduced to a smooth, buttery mass; spice to taste and put away in stone jars. If cooked properly, the spices can be omitted if desired, as the true apple flavor is preserved better without them. It is better if left slightly tart.

Fried Apples.—Cut sour apples from the cores in small chunks—do not peel them—and put them in a frying-pan with the fat fried from 2 or 3 slices of salt pork; sprinkle a little salt over them, cover tightly with a plate, and place on the stove where they will cook slowly $\frac{1}{2}$ hour. Serve as a sauce for meat at dinner. They are also good cold with bread and butter.

Glaced Apples.—Partially stew large whole apples; take them out and bake them. Take the water in which they stewed, add white sugar, and boil until it will form a soft candy when cool (about the “crack” degree). Arrange the baked apples on the dish in which they will be served, and pour the syrup over them hot. When cold, an amber coating of soft candy will have formed about each apple, which will add to its appearance and taste.

Apple Meringues.—Take 6 apples, peel, quarter and core them; set them over the fire in a sauce-pan, with 2 tablespoons of water, stirring occasionally until done; then mix 2 or 3 tablespoons of sugar with them, and arrange them into a mound in a silver or tin dish. Take the well-beaten whites of 3 eggs, and add 3 oz. pulverized sugar; spread $\frac{2}{3}$ of this over and around the apples, smoothing it with a knife dipped in cold water; put the remainder in a piping bag (see “Piping”) and decorate the dish according to taste, or put small knots here and there, over and around the dish. Dust with sugar, and put into a hot oven 20 or 25 minutes. Serve in the same dish.

Apple Sauce.—Select 12 sour apples, pare, core and fill the holes with sugar; when cooked very soft, mash through a sieve into a small pudding dish, and add the grated rind of 1 lemon; beat the whites of 2 eggs and 4 tablespoons of white sugar; add it, and brown slightly. Eat cold.

Improved Apple Sauce.—Pare and core 10 tart apples and stew with as little water as possible; then add 1 cup powdered sugar; whip the whites of 4 eggs to a stiff froth, add to the apples, and stir rapidly for a few minutes. Set aside to cool, and serve with sweetened cream flavored with lemon. It somewhat resembles ice cream, and makes a delicious dessert served with nice cake.

Improved Apple Sauce No. 2.—Too sweet apples do not cook well. Cook the

sliced apples, in barely water enough to cover them, until tender enough to mash easily through a colander; sweeten while warm, and season with rose-water, lemon juice and nutmeg. Lemon peel stewed with them adds a delicate flavor.

Cider Apple Sauce.—Take 4 quarts of sweet apples, pared, quartered and cored; add 2 quarts of cider either sweet or boiled; cover with a plate, and boil slowly but steadily until the apples are cooked.

Dried Apple Sauce.—Look over and wash the apples, and let them soak over night in soft water; cook them next morning, slowly and without stirring, until they are tender; about 5 minutes before taking from the stove add sugar to sweeten; mash through a sieve, and flavor with cinnamon.

Dried Peach Sauce can be made the same way, but do not mash it, and season it less.

Bananas, Baked.—Peel the bananas, cut them in halves, and put them in a shallow pan; for each banana allow 1 tablespoon of sugar and 1 teaspoon of hot water; melt a little butter in the hot water and pour it over the bananas; with the sugar mix a little salt and spice or lemon juice, sprinkle it on top, and bake in a quick oven till brown.

Fried Bananas.—(1) Choose bananas which are not quite ripe (the "Plantain" being best); peel, slice, and drop them into a frying-pan containing smoking hot fat, about $\frac{1}{2}$ inch deep; they will soon brown; then take them out and serve hot, sprinkled with pepper and salt, or, if for dessert, sprinkle with sugar instead. (2) Or peel, slice, egg and bread-crumbs them, and fry to a delicate brown in a kettle of smoking hot fat; drain on a sieve or blotting paper and serve.

Cranberry Sauce.—Pick over the berries, wash and scald them, and put on to stew over a moderate fire, adding 1 cup water for each pound of cranberries; cover, and stew slowly, stirring as little as possible. If boiled hard, especially when first put on the stove, it is apt to separate the skin from the berry. Sweeten them to taste on taking them from the stove. Part of the acid can be extracted from the cranberries, so that less sugar will be needed to sweeten them, if they are allowed to stand first, for about 5 minutes in boiling water; then drain them out, and set them on to stew with fresh water. A few raisins added to cranberries make a pleasant combination.

Cranberry Sauce No. 2.—Take 3 cups water, 1 lb. of raisins, and 2 quarts of cranberries; boil until soft enough to sift easily; pass it through a sieve, add 2 cups sugar, and boil 10 minutes. If some of it is desired for immediate use pour it into a mold; can the remainder for future use. Or they can be cooked together, sweetened, and set aside to cool without being put through the sieve.

Date Sauce.—Prepare dates for cooking as directed under "Cake." (1) Pare, core and quarter apples, and stew until nearly done; then add an equal quantity of dates and stew until tender, but no longer; sweeten to taste. (2) Another way is to pare and core apples, without quartering them, fill the center of each apple with dates, pour on a little hot water, sprinkle with sugar, and bake in the dish in which they are to be served; then cover with a meringue and brown slightly in the oven.

Dried Berries, Stewed.—To stew dried berries take about 1 quart of water to 1 pint of berries, and boil slowly and steadily $\frac{1}{2}$ hour. Sweeten to taste. The various dried berries are cooked alike. Raspberries and blackberries mixed are nice, using the same amount of each.

Fig Sauce.—Scald and wash $\frac{1}{2}$ lb. of nice figs; take every seed from $\frac{1}{2}$ lb. of raisins, tearing them in 2 pieces as you seed them; cut the figs in very small

pieces and mix with the raisins; add water enough to cover them, and steam 1 hour in a pudding dish. It makes a delicious sauce for tea, or dessert for dinner.

Gooseberry Fool.—Take off the tops and stalks from 1 lb. of gooseberries and stew them with $\frac{1}{2}$ cup sugar in $\frac{1}{2}$ cup water; then pulp through a sieve. Whip 2 cups cream and beat into the pulp.

Gooseberry Trifle.—Put 1 quart of gooseberries with 1 lb. of sugar in a kettle and boil until reduced to a pulp. When cold, place in a dish, pour over it 1 quart boiled custard, and cover with whipped cream.

Lemon Butter.—Take the juice of 2 lemons and the grated rind of 1, 2 cups sugar, 1 tablespoon of butter and 4 eggs; beat all well together, place over the fire, and stir until the consistency of honey.

Lemon Jelly.—Mix 1 cup sugar, 2 eggs, and 1 grated lemon; boil until thick.

Peaches, to Skin.—If peaches are dipped in boiling hot water for an instant the skins will rapidly slip off, saving labor in paring them.

Baked Peaches.—Choose those which are ripe, or nearly so, put them in a deep earthen dish, sprinkle on sugar, and bake until done, keeping them covered.

Peach Butter.—(1) Take 1 gallon of sweet cider and boil it down one-half, into this put soft peaches, pared and cut into pieces, and boil, with frequent stirring, until they are reduced to a pulp; just before taking from the fire add sugar, if it is not sweet enough, and cloves and cinnamon to taste. Keep in tightly covered jars. (2) Take ripe peaches, pare and stone them, and put in a kettle; add a little water and boil them soft, and then pass through a colander. Then add $1\frac{1}{4}$ cups of sugar to each pint of peaches, and boil slowly 1 hour, stirring often; do not let them burn. Keep in a cool place in stone or glass jars.

Fried Peaches.—Take ripe, freestone peaches, cut them in two, remove the stones, and at once drop each half, the cut side down, into a frying-pan containing about $\frac{1}{2}$ inch of smoking hot fat; as soon as they are a light brown, turn them over and do the other side; as soon as heated through, transfer them to a hot platter. Serve them hot, the hollow side up, sprinkling on a little pulverized sugar.

Baked Pears.—(1) Choose good ripe pears, pare and halve them, but do not take out the seeds; put them in a stone jar in layers, sprinkling sugar on each layer, and add a few pinches of nutmeg to flavor. To keep them from burning add 1 cup water, cover closely, and bake 3 hours in a moderate oven; leave them in the oven over night, unopened. Before using them place for a few hours on ice; then turn into a dish. Serve with cream. (2) Hard pears or "windfalls" can be pared, quartered and cored, and put into a deep pudding dish; add 1 cup water and 1 cup sugar for each 2 quarts of pears; cover closely, and bake in a moderate oven—it will take several hours. They will keep then indefinitely, if sealed in Mason jars as soon as they are done, and while still hot. Fruit that is often left on the ground to waste, may be saved thus and made useful.

Chipped Pears.—Take pears not quite ripe; pare and core them, and cut into long, thin strips; to 8 lbs. of the fruit add 6 lbs. of sugar, the juice of 3 lemons and the rind cut into strips, 2 cups of water and 2 tablespoons of ginger; boil the whole until the fruit is transparent, and then bottle.

Plum Charlotte.—Take 1 quart of ripe plums, stone, stew, and then sweeten them; place slices of bread and butter in the bottom and around the sides of a large bowl or deep dish, and pour in the plums, boiling hot; cover the bowl and set it away to cool gradually. Send it to the table cold, and eat with cream.

Damson Sauce.—Take 6 lbs. ripe damsons, 1 quart cider vinegar, $1\frac{1}{2}$ lbs. sugar;

boil until the damsons are soft, then take them out, mash them, put back into the syrup and boil from $\frac{1}{2}$ to $\frac{3}{4}$ hour, stirring them and watching that they do not stick to the kettle or burn.

Prune Sauce.—(1) Soak the prunes over night; in the morning boil until they will slip from the stones easily; when used, slip them from the stones and serve with thick cream. (2) To 1 lb. prunes when put on to stew, add the juice and thin yellow rind of an orange; when done (when the stones are loose) sweeten with plenty of sugar. This sauce is excellent with rabbit, roast pig, kid, venison or fawn.

Stewed Prunes.—Select good prunes, wash them, and let soak 1 or 2 hours if dry and hard; then cover them with boiling water, cover closely, and boil until tender and swollen; then for each quart of prunes add 2 tablespoons of sugar, and boil a little more, but not long enough to break the skins. A little lemon juice may be added if they are deficient in flavor.

Baked Quinces.—Choose ripe quinces, wash and core them, fill the cavities with sugar, put in a baking-pan with a little water and bake until soft. They are very fine if eaten with sugar and butter when hot.

Stewed Quinces.—Choose good quinces, and pare, quarter and core them; add sufficient water to $\frac{1}{2}$ cover them, cover closely, and stew until tender; for each lb. of quinces add 1 cup of sugar, cover closely, and cook until a thick syrup. If $\frac{1}{2}$ as many apples as quinces are used it makes a nice dish.

The Quince is a native of India, whence it was introduced to Greece. The ancients preserved it in honey, or sweet wine reduced $\frac{1}{2}$ by boiling. It makes a fine marmalade and a little added to apple pie improves the flavor.

Raisiné.—Take very ripe but quite sound grapes, squeeze the juice from them and boil until it is reduced a half. Peel and core some pears, quarter them, put them in this grape syrup, and boil till it is reduced a third. It may be made with unripe grapes, but then sugar must be added, allowing $\frac{1}{4}$ lb. to each pint of grape juice.

Stewed Rhubarb.—Peel it, cut into inch pieces, stew it until soft, and sweeten to taste. If very sour, it can be allowed to first stand 5 minutes in boiling water, then drain it out and put it in fresh water to stew. This extracts part of its acid, and less sugar is then needed to sweeten it. Rhubarb and green currants mixed together, stewed, and sweetened to taste, make a pleasant sauce.

Rhubarb Butter.—To each pound of rhubarb, which is peeled and chopped, allow 2 cups sugar; let them simmer together until it is done.

Rhubarb is a native of Asia, and its introduction to Europe is of quite recent date. It belongs to the buckwheat order. Although it cannot be eaten raw, when cooked it is much used. All kinds are best for culinary purposes when blanched. The stalks are sometimes partly blanched by putting a headless barrel over them and allowing them to grow up through it. Its food value is small, not $\frac{1}{4}$ of its solid matter being nutritive. It contains about 2 % of sugar, which is its chief nutrient element. Its sour taste is due to the presence of oxalic acid, of which it contains 0.3%. In some conditions of the body, rhubarb, sorrel, and other plants containing oxalic compounds, are best avoided. Oxalic acid is always and everywhere an irritant poison, but the amount in rhubarb is small.

A Hint.—If equal quantities of rhubarb and any other kind of fruit are mixed together the rhubarb will soon taste exactly like the other fruit.

Tomato Butter.—Scald the tomatoes, remove the skins, and add $\frac{1}{4}$ as much pared, cored and quartered apples as there are tomatoes; cook slowly, stirring often, till reduced to the consistency of marmalade; when the apples begin to break, sweeten to taste with light brown sugar, and add the juice of 1 lemon and 1 teaspoon ginger, if desired, for each 6 lbs. of the fruit.

COMPOTES.

These are the French method of preparing the English stewed fruit. Compotes consist of any kind of fresh fruit, partly cooked in a syrup less strong than that used for preserves or jam, and are used the same day they are made. If

enough sugar is allowed they will keep good for 2 or 3 days, in a cool place. If there is any sign of mold or fermentation, it may be checked on its first appearance by boiling the preparation a second time for 1 or 2 minutes. They are more economical and wholesome than pastry, and superior compotes can be served for dessert. They are much relished by persons who cannot eat raw fruit. They should be served in a glass dish with cake.

The essential thing to remember in making compotes is that the fruit should not be cooked as thoroughly as when it is to be served as stewed fruit; it must not cook enough to lose either its form or color. After the fruit has simmered in the syrup, lift it out with a skimmer, arrange it in a glass dish (called a *compotier*) boil the syrup a little, let it cool, and pour it over, straining it if it needs it. If an insufficient amount of sugar is used the syrup will not be clear and bright.

Syrup for Compotes.—A good rule is to allow 3 cups of water for each lb. of sugar; boil it 15 minutes, removing the scum carefully as it rises; the syrup is then ready for use. Articles boiled in this will not keep long, it being suited only for dishes intended to be eaten immediately; more sugar must be added for syrup intended to keep. Also the kind of fruit and its ripeness will affect the amount of sugar needed.

Compote of Apples.—Select moderate sized apples; either pare, halve, and core them, or cook them whole if preferred; then add prepared syrup and let them simmer until tender, adding a little lemon juice; lift out apples and boil syrup a little to thicken it; cool it, and pour it over the apples. *Garnish* it with strips of green angelica, candied citron, or a border of rice jelly or plain boiled rice, or put a slice of lemon on each apple.

Pears, Peaches, and other fruit may be prepared the same way, but it is best to stone peaches.

Oranges should be peeled and divided into sections without breaking the thin skin; then treat them as directed for apples.

Banana Compote.—Peel and slice the bananas and place them in a dish (alternate layers of red and white bananas look nice), pour over them the hot syrup for compotes, let stand till cold, and serve with whipped cream.

Compote of Figs.—Dissolve $\frac{1}{4}$ lb. of loaf sugar in 2 cups of water; add 1 lb. of dried figs, a little grated lemon rind, and stew all very gently for 2 hours. Have some sponge cake ready, cut into squares; lay a stewed fig on each square, add a little lemon juice to the syrup, which should be pretty thick, and pour it over the figs. Serve when cold with thick cream or whipped cream. It makes a dainty, cheap and wholesome dessert.

A Compote of Green Figs can be made with $1\frac{1}{2}$ pints of green figs and 1 pint of the prepared syrup, and proceed as directed for a compote of apples.

Gooseberry Compote.—Gooseberries for compote should not be very ripe; top and tail them, pour on some boiling water, then take them out and plunge them into cold water containing a little vinegar, which will assist in keeping the color good; then drain them, put them into the syrup, and proceed as directed for apples, being careful not to break their skins.

JAMS, JELLIES, MARMALADES, AND PRESERVES.

These include all those preparations of fresh fruit made with a sufficient quantity of sugar to prevent fermentation, without the process of sealing them in cans or bottles while hot. They have been used from time immemorial under the name of sweetmeats or preserves. A goodly array of preserves and jellies in her store-closet will fill the heart of the thorough housewife with great satisfaction, and although it is some work to make them she will know that they are pure and healthful, while often there is much uncertainty about those bought at the stores.

GENERAL SUGGESTIONS.

The Fruit.—Fruit intended for preservation should be gathered in dry weather, and, if possible, while the morning sun is on it; it will then have its finest flavor, and will keep better than when gathered at any other time. It should be used as soon as possible after it is gathered; if kept a short time, put it in a refrigerator or ice-house—in the latter it will keep fresh and plump for several days. Fruit that is dusty is not injured by being rinsed quickly in and out of cold water, but if gathered during or immediately after a rain the juice will be less rich and less full of flavor; if gathered in damp or foggy weather it will soon mildew, and so will be worthless unless used immediately, and boiled very thoroughly, when it can be made into jams or preserves that will keep, but they will be of inferior quality and doubtful wholesomeness. There is no greater mistake than to imagine that half-ripe or over-ripe fruit is good enough for preserves. The fruit should be free from dust, and any which is unsound should be cast aside. Whatever fruit has been boiled should be finished up the same day, and never any kept over night. Quinces, pears, apples, etc., can be kept from turning dark by putting them in cold water as soon as pared, but it is better to cook them as soon as possible.

The Sugar.—The best quality of sugar either white or brown will be found the cheapest in the end. For the more delicate kinds of preserves only the best sugar should be used. Jelly made from a bluish white sugar will not harden well. An inferior quality of sugar is sometimes used for preserves or canned fruit, but when that is used they will spoil more easily, and will not look as well. If too little sugar is used the mixture will not keep, and it is false economy to try it. If too much sugar is used, on the other hand, the flavor of the fruit will be lost. Coarse brown sugar conceals the flavor of the fruit, and moist sugar lacks sweetening power.

The water used for melting sugar should be pure, clear and entirely free from sediment, as any cloudiness will impair the clearness of the product, and in clear jellies this is objectionable.

The Utensils Used.—The best vessels to use in cooking fruits for preserves or canning are aluminum, porcelain-lined kettles or yellow ware dishes. Never use tin vessels, as the acid of the fruit acts on the tin and the poisonous acetate of lead is formed. To cook the fruit equally throughout, the vessel should be rather large in diameter and not too deep; if too much heaped the fruit will not cook evenly. Close fitting covers should be provided, and put on after the scum has done rising, so as to retain the flavor of the fruit with the steam. Wire sieves and iron pots destroy the flavor and should not be used. Copper or brass kettles should be scoured very bright with salt and vinegar before being used, and the fruit removed *at once* on taking it from the fire, but even then some of the poisonous *verdigris* will be formed by the action of the acids on the metal. Porcelain lined vessels are much better. Aluminum vessels are excellent to use, because the citric, malic and other acids found in fruits do not affect that metal.

Fruit should be stirred with either an aluminum, silver or wooden spoon—the latter is best. Iron, tin or pewter ones will spoil the color.

THE PRINCIPLES INVOLVED.—Although the sugar passes easily into the state of fermentation, and is in fact the only substance capable of undergoing the vinous stage of that process, it will not ferment at all if the quantity be sufficient to constitute a very strong syrup; hence syrups are used to preserve fruits and other vegetable substances from the changes they would undergo if left to themselves. Before sugar was in use honey was employed in preserving, but it is now replaced by sugar. In putting up juice or fruit, the object is to boil it with sugar to such a consistency that it will neither ferment nor mildew.

In boiling most fruits, it is best to boil them in water first, and add the sugar when the fruit has become soft and the juice is drawn out. The first object in preserving fruit is to soften it by boiling in water, so that the sugar by which it is preserved may penetrate *all through it*, and so preserve it well. The more thoroughly the skimming is done the clearer the preserves will be.

Fruit jellies owe their jelly-like consistency to the presence of a sort of gum-like substance which they contain called *pectose*, or *pectic acid*. This substance, although soluble in fruit juice, when mixed with sugar, exposed to heat, and cooled, will coagulate. Although in appearance so much resembling gelatine, from a chemical standpoint it is entirely different, being nearly allied to *gum*, but it has about the same food value as the sugar with which it is mixed. The pectose does not develop in fruit until it begins to ripen, but as soon as the fruit is over-ripe it loses its gelatinizing property. For jellies, therefore, fruit should be gathered *as soon as* fully ripe, or just a little before. Over-cooking jelly also destroys the gelatinizing properties of the pectose.

The chemical composition of the various preserves is simply the composition of the fruit juice and fruit itself, with the loss of a few volatile constituents, and the addition of cane sugar.

Home-made preserves, jams, etc., when properly prepared and well made, are much superior to those which are sold in the market. Professor Sharpless says that "apple sauce is frequently pumpkin boiled with cider; that raspberry jam offered for sale is often sour, and that strawberry jam is frequently made from the refuse strawberries of the market."

Putting in Jars and Keeping.—Put jellies, jams, and marmalades in small glasses, which will prevent the frequent opening necessary with large ones. The usual method has been to lay on top a piece of paper dipped in brandy or alcohol and cut to fit nicely, and then paint a larger piece with white of egg and tie it on over the other—some people tie on parchment. A much simpler and easier method for jellies is when they get cold to pour on melted paraffine. It hardens almost immediately, and then a piece of brown paper can be tied on to keep out the dust. The paraffine will lift off easily, and it can be washed, kept, and used again by remelting.

If any of the preparations become candied, set the glasses in water and let it boil around them, which will remedy it. If jellies are put in wine bottles for exportation, put 1 tablespoon of alcohol in each bottle before sealing. Look over jellies the last of the summer, and reboil them if there are any indications of fermentation.

The glasses or jars into which jams, preserves, etc., are put, should be perfectly dry, and the closet in which they are stored should be neither so warm that they ferment, nor so damp that they become moldy.

Preventing Mold.—Jellies can be kept from molding by covering the top, when cool, with pulverized sugar, melted paraffine, or oil, like salad or cotton-seed.

MOLD.—Remember that mold is a low form of life (it is a plant) and a certain amount of moisture is necessary to its growth. Its seeds are so small that they penetrate the tiniest crack, and the mold spreads readily from one thing to another. If specks of mold appear, the plant can be killed by putting the jars in a well-heated oven, or by putting them in a pan of water and letting it boil around them. Its presence is always an injury, detracting from both the wholesomeness and flavor of the article it attacks.

Keep jellies, jams, etc., in a dark, cool, dry closet. Paste on the side of each glass a little strip of paper bearing the name of its contents. If glass jars are used for preserves, wrap 2 or 3 thicknesses of paper around each one, which will exclude the light and keep them from bleaching.

Coloring.—The only coloring suitable for any fruit preparation is some vegetable color, like those we give for "Frostings," but they should be used sparingly.

JELLIES.

These are made with clear fruit juice and sugar, the usual rule being to mix them in equal proportions. As, owing to the change in its pectose, fruit will not make jelly when it is over-ripe, it should be gathered for this purpose just as it turns ripe. If you wish clear, firm jelly, do not make it in damp or rainy weather.

When a sweet fruit, like the pear, etc., is used in making jelly, add some very

sour apple juice—say about half; or for strawberries use red currant juice. Alone, the sweet fruits do not make good jelly because they lack pectose—the substance which causes fruit juice to jelly. Gelatine is sometimes added with cherries and some other fruits; allow a package to each $\frac{1}{2}$ gallon of juice when it is used. Grapes are unreliable. Crab-apples jelly readily. Combining 2 fruits, like $\frac{2}{3}$ currants to $\frac{1}{3}$ raspberries, improves the flavor of jams and jellies. Another excellent combination for jelly is $\frac{1}{2}$ apple juice to $\frac{2}{3}$ peach juice. A delightful jelly is made from swamp huckleberries or low blackberries. Barberries, currants, apples, grapes and quinces all jelly well. Damsons make an excellent jelly.

To Make Jelly.—In making jellies cut large fruit into small pieces; add water enough to prevent the fruit from burning—apples and quinces need just enough to cover them, and currants less; cover the kettle and boil slowly until the fruit is soft. Then put both fruit and juice into the jelly bag, and allow it to drip, setting it in a warm place. Toward the last, squeeze the bag gently with the hand, or use 2 spoons, but do not be too anxious to squeeze out *all* the juice, as the more you squeeze it the cloudier you will make the jelly.* Measure the juice, and the general rule is to allow 1 lb. sugar to each pint of juice, but quinces need only $\frac{3}{4}$ lb. sugar to each lb. of juice. Now put the juice on the stove, bring it to a boil, and continue to boil without being covered, until done—20 minutes being the rule for most fruits; skim frequently, as the more perfect the skimming the clearer the jelly will be; do not boil it too hard. Have the sugar ready heated (heat it in the oven while the juice is boiling, stirring it frequently from the bottom), and now drop it into the boiling juice, stirring constantly. Let it just come to a boil, and put at once into the jelly glasses; or another plan is to have a heated pitcher ready, with a piece of cheese cloth wet in *hot* water spread over the top. Pour the jelly, a dipperful at a time, through this strainer into the pitcher, and then turn it from the pitcher into the glasses, and set away to cool. The jelly glasses can be standing ready in a pan of hot water; take them out, drain, and turn in the jelly.

In making jelly it should boil neither too long nor too short a time; if it boils too long it will be discolored and its flavor injured; if insufficiently boiled it will not keep well. The longer it boils the darker it becomes. If the juice is very watery, and the effort is made to evaporate the water by long boiling, the gelatinizing property is destroyed, and it becomes gummy and will not jelly.

To Test Jelly.—There are various ways: (1) Drop a little into cold water or on a cold plate, stirring it for a few seconds, and if it coagulates it is done; or (2) let 1 or 2 drops fall from the skimmer into a glass of cold water; if it reaches the bottom a solid drop of jelly, without dissolving in the water, it is done; or (3) dip the skimmer in and out, holding it sideways over the jelly; if it runs off in only one place it is not cooked enough; if it runs around the skimmer and drips off in 2 or 3 places in wide thick drops, it is done.

Hardening Jelly.—Jelly which is not quite as firm as desired can be shrunk by setting the glasses in the sun.

To prevent breaking the glasses when pouring in the hot jelly, several plans are in use. One plan is to rub the glass over on the outside with lard or butter, and then pour in the first 1 or 2 spoonfuls slowly. Another is to stand the glasses while being filled on a folded towel wet with cold water. Another plan is to put a silver spoon in the jar; but the folded towel is the best plan.

Jelly bags should be made of white flannel, and wrung out of hot water, to prevent their absorbing too much of the juice. Tie the top of the bag closely when the liquor is all in, to prevent the flavor from evaporating. A wooden frame on which to tie the jelly-bag while it is dripping, is a convenience. Use the bags for nothing but making jelly.

Waste nothing when making jellies; the pulp can be put up as marmalade for tarts and cake fillings.

To remove jelly from a glass, dip it into hot water for an instant; then take it out, and the jelly will come out easily and whole.

*NOTE.—Squeezing all the juice out of the bag makes the jelly cloudy; if it is not squeezed much of the contents of the bag are often wasted. To prevent the waste some housewives use the juice which will drip through without squeezing, and make a clear jelly for table use. The balance they squeeze out, and with it they make a second quality of jelly to use for cake, puddings, sauces, etc. It is good, but not so clear.

The prevention of mold, keeping jellies, etc., are discussed in the preceding "General Suggestions" (which see).

Apple Jelly.—Use good, sour apples; slice them thin, seeds, skins and all; let them simmer with only the addition of a little water, until well cooked and soft; strain, add 1 lb. sugar to each pint of juice, and finish as directed previously for making jelly. If desired, a little lemon flavor can be added.

Plum and Apple Jelly can be made by using 1 part plum juice to 2 parts sour apple juice, and finishing like other jelly. It is very good.

Crab Apple Jelly.—Cut them into pieces, but do not pare or remove the seeds; boil until soft in a jar set in hot water, adding barely water enough to cover them; mash them, drain off the juice without squeezing; use 1 lb. sugar for each pint of juice, and finish as before directed. A little lemon juice can be added for flavor if desired; or a little stick cinnamon boiled with the juice and taken out before putting in the sugar, is good.

The pulp and juice which remain can be made into *marmalade*. Add more water and cook to a pulp; strain through a sieve to remove skin, cores and seeds. Add brown sugar to the pulp, pound for pound. It needs careful watching and stirring to prevent burning.

Dried Apple Jelly.—Boil the dried apples until tender, strain through the jelly-bag, and allow $\frac{3}{4}$ lb. sugar to the pint of juice; adding a little lemon juice will improve the flavor; then finish like other jellies.

Blackberry Jelly.—Choose berries which are under rather than over ripe; the wild berries are best. Cook till soft, adding very little water; strain through the jelly bag, and allow 1 lb. sugar to each pint of juice. Finish like other jellies.

Raspberry and Strawberry Jellies are made just the same way.

Cherry Jelly.—Pick the fruit (Morellos are best) when not quite ripe; wash and put on the stove in cold water *with the pits in*; let it simmer (not boil) until the cherries are white and tender; strain through the jelly bag, allow 1 pint sugar to 2 pints juice, and cook briskly until done. Cooks sometimes add $\frac{1}{8}$ part of red currant juice, but cherry jelly can be made without it. Leave the pits in because a large part of the pectose is in the pits.

Cranberry Jelly.—Pick over the cranberries carefully, and put 2 cups water in 2 quarts of cranberries; let boil, stirring occasionally, until soft enough to mash; strain, and finish like other jellies. Use 1 lb. of sugar to 1 pint of juice.

Red Currant Jelly.—Choose good, ripe currants; pick them over, but do not stem them; wash, drain and mash them in a porcelain kettle; it will darken the jelly to heat them now; use a wooden masher; drain over night in the jelly bag, but do not squeeze it. Use 1 pint sugar to 1 pint juice; boil and finish as directed for jellies. After putting in the hot sugar, let it boil till it thickens when exposed to the air on the spoon (which will be in 3 to 5 minutes) and then put it into the glasses immediately. A second grade of jelly, not so clear, can be made by squeezing the remaining juice out of the currants, and finishing it like jelly.

Various Jellies.—A very nice jelly is made by using red and white currants in equal parts. A *raspberry and currant* jelly can be made by using 1 part red currants and 2 parts red raspberries. It is very fine. A *wild cherry and currant* jelly can be made by stewing 2 parts wild cherries (stones and all) and 1 part red currants. *White currant* jelly can also be made like other currant jellies.

Gooseberry Jelly.—Take full-grown, but not quite ripe gooseberries; cover with water and boil until they are soft; strain the juice, and allow 1 lb. sugar to each pint of juice; finish like other jelly.

Grape Jelly.—Isabella, Concord or Clinton grapes are best to use; have them freshly picked, and finish as directed for other jellies, using 1 lb. of sugar to 1 pint of juice.

Green Grape Jelly.—Use green grapes; wash, stem, and cook till soft with a very little water; mash with a wooden pestle, strain through the jelly bag, and allow $1\frac{1}{2}$ lbs. sugar to each pint of juice. Finish like other jelly. It makes the nicest jelly there is to go with poultry and game, and is superior to ripe grape jelly.

Peach Jelly.—Use 1 part very sour apple juice to 2 parts peach juice, and make like other jellies. Equal parts are sometimes used. A little lemon juice is sometimes added.

Pear Jelly can be made the same as peach jelly.

Plum Jelly.—Choose the common blue plums, wash them, cook until soft in a porcelain kettle, adding 1 cup water to each 2 quarts of plums; then drain through the jelly bag, and finish like other jellies.

Damson Jelly is made the same way.

Quince Jelly.—Cut the quinces into small pieces, and put them, skin, seeds and all, into a preserving kettle (a large part of the pectose is found in the seeds); cover with water and boil till soft; mash, and drain in the jelly bag over night; allow 1 lb. sugar to each pint of juice, and boil to the jelly degree. The pulp of the quinces, left after making the jelly, can be rubbed through a fine colander, and, using as much sugar as pulp, boil them together for marmalade. Another plan is to use the best portions of the fruit for canning or preserves, and make jelly with the hard parts, cores and skin, and this works well. Sour apple juice is sometimes mixed with quince juice.

Rhubarb Jelly.—Cut the rhubarb into pieces about 1 inch long, but do not peel it; cook it to a soft pulp in water enough to cover it; strain through the jelly bag, and allow 1 lb. sugar to each pint of juice; finish like other jelly. Apple and rhubarb mixed together, and finished like other jellies, is very nice; flavor it with lemon.

Wild-Plum Jelly.—Gather wild plums just before they ripen; use 7 pints of water to 5 pints of plums, and boil until they fall to pieces; then strain through the jelly bag; allow 1 lb. sugar to each pint of juice, and boil rapidly to the jelly degree. They make very nice jelly. Some cooks boil the plums with water until they burst, and then throw it away because of its bitterness; then boil the plums again in water to cover them until they fall to pieces; then finish as above. The pulp remaining can be made into a good *marmalade* by using the pulp and sugar pound for pound.

Tutti Frutti Jelly.—Use equal quantities of red currants, red raspberries, strawberries and morello cherries; stone the latter carefully saving all juice; mix together all the fruit and squeeze it well; after straining through the jelly bag, allow 2 lbs. sugar to each pint of juice, and finish like other jelly.

MARMALADES.

These are made from the pulp of fruit boiled with sugar. If marmalade is made at the same time with jelly, the pulp left from the jelly can be used and waste prevented. Rub the pulp through a sieve, and for acid fruits the rule is to allow equal weights of sugar and pulp; sweet fruits need a little less. If too much sugar is used the sides and tops of the vessels containing the marmalade

will be covered with a coating of sugar, and it will candy or crystallize; fermentation will take place if too little sugar is used, or the boiling is insufficient. The rule is to boil slowly $\frac{1}{2}$ to $\frac{3}{4}$ hour, with frequent stirring to prevent burning.

To test both marmalade and jam let a spoonful of it cool on a plate; it will be done if it looks glittering and dry, and neither moisture nor juice collects on it.

If the sugar is not added until the fruit is mashed and cooked, less boiling will be needed, and the marmalade will be better and smoother. When done, put it in glasses as explained in the preceeding "General Suggestions." Keep in a cool, dry place.

The term marmalade is derived from the Portuguese *marmelo*, meaning a quince, to which it was first applied; but it has come to be applied to similar preparations of any fruit. Marmalades are very wholesome, and serve to stimulate the appetite.

Grape Marmalade.—Pulp the grapes, but put the skins and pulp together into the preserving kettle and let boil. When the skins are tender let cool until you can work the mass through a fine colander. Wash the kettle and return the strained grapes, set over the fire, and add the same measure of sugar as there is of the grape. Let boil 5 minutes and put hot into jelly tumblers. If the grapes are not quite ripe the marmalade will be more firm.

Orange Marmalade.—Pare the yellow rind carefully off of the oranges; remove the thick white rind and squeeze the pulp through a sieve; add 1 gill of water to 4 lbs. fruit, and set on to boil; add the yellow parings of the rind, cut into pieces, and boil $\frac{1}{2}$ hour, or until the rind is soft; the juice, pulp and yellow peel of a lemon can be added if liked; add 1 lb. sugar to 1 lb. pulp, boil a few minutes and put into jelly glasses.

Rhubarb can be added instead of the lemon if desired; use 1 quart of sliced rhubarb for 6 oranges and boil with them. It makes a fine combination and gives a variety.

Peach Marmalade.—Choose fine, ripe peaches; pare, stone and cut them up; add a very little water and cook in the farina boiler until reduced to a pulp; pass through a colander and allow $\frac{3}{4}$ lb. sugar to each lb. of pulp; put it on the stove and boil until it will jelly, or until it will drop from the spoon in clots. Stir it from the bottom with a wooden spoon all the time it is on the fire to prevent burning. When done, seal in jars.

Apricots, Apples, Pears, Quinces, and other fruits can be prepared in the same way.

Plum Marmalade.—Stone the plums, and put in the kettle with a very little water, boil till the fruit softens, and then mash to a pulp with a wooden pestle; do not take it from the stove, but add 1 lb. sugar to 1 lb. of pulp, and boil 15 or 20 minutes longer; then put it in jars.

Quince Marmalade.—Pare, core and slice the quinces; put the seeds, cores and skins in the kettle, add barely enough water to cover them, and boil slowly $\frac{1}{2}$ hour; strain through cloth, and when nearly cold add it to the quinces in the farina boiler, and boil until it is reduced to a smooth paste, mashing and stirring the quinces with a wooden spoon; if the flavor is desired the juice of 2 oranges can be added to each 3 lbs. of pulp; now add $\frac{3}{4}$ lb. sugar to each pound of fruit, and boil 10 minutes longer, stirring continually. Then put in jars.

No. 2.—Quinces which are not good enough to be utilized in other ways can be used; wash, core, but do not pare them, and cut into pieces; add 1 teacup of water to each pound of fruit, and boil slowly, mashing and stirring with a wooden spoon until soft; add $\frac{3}{4}$ lb. sugar to 1 lb. pulp; boil them together for 5 or 10 minutes, strain through a colander and put in jelly glasses.

Sour Apples or Crab Apples can be put up in like manner.

Raspberry Marmalade.—Either use the raspberries alone, or add 1 cup of red currant juice to each 2 lbs. fruit; boil 30 minutes, mashing and stirring well with a wooden spoon; add $\frac{3}{4}$ lb. sugar to every pound of fruit, and cook 20 minutes more.

Blackberry Marmalade can be made the same way, but without any currant juice.

Rhubarb Marmalade.—Cut the rhubarb into pieces 1 or 2 inches long; to each $1\frac{1}{2}$ lbs. of rhubarb allow 1 lb. sugar, $\frac{1}{2}$ of a lemon peel cut thin, and $\frac{1}{4}$ oz. of bitter almonds blanched and divided. Boil all well together and put up like other marmalades.

Strawberry Marmalade or Jam.—Allow 5 lbs. sugar and 1 lb. currants to 6 lbs. strawberries; mash the currants in the preserving pan with 1 cup water, put it on the stove and boil; then add the strawberries (which should be picked over), then press and rub them into an earthenware pan through a fine sieve. Let the sugar boil to the consistency of thick molasses, add the fruit pulp, and boil briskly, with constant stirring, for 20 minutes. Skim it, and put into jars.

Tomato Marmalade.—First scald, peel and slice the tomatoes; allow 2 lbs. sugar to 1 lb. tomatoes, and boil them down together until well thickened; then add 1 tablespoon powdered ginger, and the juice and peel of 2 lemons, for every 3 lbs. of tomatoes. Boil about 3 hours, skimming off the froth that rises; when very thick put in jars.

FRUIT CHEESES.

Fruit cheeses are somewhat like marmalades, and they are generally used for desserts. Stone fruits, like plums, quinces, etc., make the best. The method is usually to boil the fruit until it is soft enough to pass through a sieve, and then the pulp is boiled with sugar until it will solidify when cold. Cherries are often used, and gooseberries sometimes.

Apricot Cheese.—Wipe apricots, cut them into pieces, and take equal quantities by weight of apricots and sugar; wipe the inside of the preserving pan with fine salad oil, put in the fruit, and boil it to a pulp, stirring all the time; add the sugar, continue to stir, and boil sharply till it is a golden brown; it will cling to the spoon when done, and leave the pan clear. Pour it into small molds and cover. It takes about 6 hours to make. Some people blanch and shred the kernels, and add them.

Almack Cheese.—Split 4 doz. plums, and take out the stones; pare, core, and slice 2 doz. pears and 2 doz. apples; put the whole in layers into a stone jar, and put them into a cool oven; when sufficiently tender press them through a coarse sieve into a preserving pan, and stir in 1 lb. of sugar to every pound of fruit. Stir them over a moderate fire until very firm. Cut into slices after it has become sufficiently cool.

Quince Cheese.—This is simply marmalade which has been boiled down *very* thick, and put into little jars. It will be as solid as cheese when turned out, and it can be served for tea or luncheon, cut into slices like cheese.

Plum Cheese.—Add enough water to keep from burning, and boil the plums; now mash them, strain, and add $\frac{1}{2}$ lb. good brown sugar to 1 lb. plums; boil down until thick, with continual stirring, and put in small jars. It will turn out firm as cheese, and can be served for tea or luncheon cut in slices.

FRUIT PASTES.

These are a kind of marmalade, consisting of the pulp of fruits, first evaporated to a proper consistency, and then boiled with sugar. The mixture is then poured into a mold, or spread on sheets of tin, and afterwards dried in the oven or on the stove until it assumes the form of a paste. Strips may be cut from one of these

sheets and formed into any shape desired. Use only fine white sugar for these pastes. Use a wooden spoon to stir them with, and watch them carefully, as if they burn in cooking it will spoil them. The cakes can be cut up and kept in tin or paper boxes with layers of paper between; they are fine with desserts.

Apple Paste.—Choose sound ripe apples, peel, core them, and cook in a little water till quite soft; rub them through a hair sieve, using a wooden spoon; weigh the pulp and put it in the preserving pan, with the same weight of sugar, and boil 20 minutes; remove it, spread out thin on plates or in molds, and dry in a cool oven or on a cool stove. If desired it can be colored with some of the vegetable colors elsewhere given.

Apricot Paste.—Use ripe apricots; put them in a preserving pan with a little sugar, and place them on the side of the range to reduce them to a paste; rub them through a hair sieve, allow $\frac{1}{2}$ lb. sugar to 1 lb. pulp, and boil it 10 minutes; then finish like apple paste.

Currant Paste.—Take red or white currants, pick them over carefully, rub through a sieve, and put the mashed fruit in a pan on the fire, stirring it until it forms a paste; allow $1\frac{1}{4}$ lbs. sugar for 1 lb. pulp, mix them together, and boil 20 minutes. Finish like other paste.

Orange Paste.—Press the juice out of 5 Seville oranges, and boil them until the rinds are very soft indeed; with a thin wooden or silver spoon scoop out all the pulp, and pound the rinds as fine as possible in a mortar with $\frac{1}{2}$ the extracted juice. Rub it all through a hair sieve, and simmer on the fire until it becomes like marmalade. Empty it out, weigh it, and allow 2 lbs. sugar for 1 lb. pulp; boil it 10 minutes, and spread out and dry like apple paste.

Lemon Paste can be made the same way, but do not use any of the juice.

Peach Paste.—Cut the peaches into small pieces, and cook, with barely enough water to cover them, until reduced to a pulp; allow $\frac{1}{2}$ lb. sugar to 1 lb. pulp, and boil 20 minutes; finish like other paste.

Plum Paste.—Any kind of preserving plums will do; stone them and boil, with very little water, to a jam; rub through a hair sieve, put on the stove, and reduce to a paste; allow 1 lb. sugar to 1 lb. pulp, and cook 20 minutes; finish like other paste.

Raspberry Paste.—Take 2 quarts of ripe red raspberries, put them in an earthen jar and place it in a kettle of boiling water; boil until the juice is well separated, then pulp them through a fine colander. Mix with the fruit an equal weight of sugar, put it in a sauce-pan, and cook until it is a firm paste—stirring constantly to prevent burning; spread on plates to nearly dry in the oven, then cut it in squares cover both sides well with pulverized sugar, and pack in paper boxes with layers of white paper between.

Strawberry Paste can be made the same way.

JAMS.

These are made with large fruit cut into small pieces, or with whole small fruits. In making common jams the fruit should be well boiled before the sugar is added, and care should be taken that it is not so much thickened that the sugar will not easily dissolve. The old rule was equal amounts of fruit and sugar, but acid fruits require more sugar than those which are sweet. If they burn at all in cooking the flavor is spoiled; to prevent this close attention is needed and constant stirring. Jam will not keep well unless sufficiently boiled, and enough sugar is used, but do not use too much sugar.

As jams and preserves made from stone fruits are apt to ferment, care should

be taken to get rid of the moisture, and only enough water added in cooking to simply prevent burning.

In the "General Suggestions" previously given we explain about putting jams into glasses or jars when done. The hardening of fruit is discussed under preserves, but mashing also prevents hardening.

Apple Jam.—Pare, core and slice the apples; boil them till soft, add $\frac{3}{4}$ lb. sugar for 1 lb. fruit, and cook till done. A fine flavor will be imparted by tying in muslin a little lemon peel, ginger and cloves, and boiling it with the fruit; take it out when the jam is done.

Blackberry Jam.—Take 5 lbs. of fruit, mash it, and boil 10 minutes; then add 7 lbs. sugar, and boil 20 minutes, stirring to keep from burning. Put into the glasses hot; tie up when cold.

Cherry Jam.—Before stoning the cherries weigh them, and to 1 lb. cherries allow $\frac{1}{2}$ lb. sugar; then stone them and boil until the juice is nearly evaporated, stirring constantly; then add the sugar, and add also 1 pint of red currant juice for each 6 lbs. of cherries used, and add also 1 lb. sugar for each pint of currant juice used; then finish like other jams.

Red Currant Jam.—Pick over the currants carefully, and allow $\frac{3}{4}$ lb. sugar to each pound fruit; let them simmer in the farina boiler until soft; then set aside until next morning, and cook them gently in a porcelain kettle 25 minutes; then put into glasses.

White Currant and Barberry Jam can be made the same way, but for barberries allow 1 lb. sugar to 1 lb. berries.

Gooseberry Jam.—Pick the gooseberries just as they begin to turn; stem, wash and weigh them; to 4 lbs. of fruit add $\frac{1}{2}$ teacup of water, boil until soft, then add 4 lbs. sugar, and boil until clear. The jam will be clear and amber-colored if the fruit is picked at the right stage, and much nicer than if it is not picked until fully ripe.

Grape Jam.—Allow $\frac{3}{4}$ lb. sugar to 1 lb. grapes; squeeze the pulp from the skin; boil the pulp a few minutes and remove the seeds by passing through a sieve; then add the skins and sugar, boil until it thickens, and put up like other jam.

Green Grape Jam is made the same way.

Orange Jam.—Sweet oranges are best; remove the rind and then the seeds by passing it through a colander or sieve; to 1 lb. pulp and juice allow 1 lb. sugar; boil 10 minutes, add the sugar and cook till done; put up like other jams.

Pineapple Jam.—Pare it, cut in small pieces, and cook in just enough water to cover until tender. Allow $\frac{3}{4}$ lb. sugar to 1 lb. fruit; make the sugar into a syrup, add the pineapple and boil 10 minutes; then put up like other jams.

Plum Jam.—Allow $\frac{3}{4}$ lb. sugar to 1 lb. fruit before it is stoned; then take out the stones and stew the fruit in a little water till soft; pass it through a coarse sieve, add the sugar, and cook until done. Put up like other jam.

Quince Jam.—Cook any desired amount of quinces until soft in as little water as possible without burning; pour off the water and rub the fruit with a wooden spoon until smooth; add 10 oz. sugar to 1 lb. fruit, let it boil 20 minutes, and remove it from the fire; put up like other jams.

Raspberry Jam.—Mash the berries, and treat as directed for strawberries. If 2 parts raspberries and 1 part red currants are mixed it makes a fine jam, or add a little currant juice.

Rhubarb Jam.—Allow 1 lb. sugar for 1 lb. rhubarb; cut up the fruit into small pieces, put on the sugar, and let it stand several hours, or until next morning; then take out the fruit, and boil the syrup until it thickens; then put in the fruit

and let it simmer gently until done, stirring it to prevent its burning; then put in glasses.

Strawberry Jam.—Hull the berries, put them over the fire, and boil gently $\frac{1}{2}$ hour, keeping them constantly stirred; allow $\frac{3}{4}$ lb. sugar to 1 lb. fruit; remove the berries from the fire, add the sugar, and then boil them again $\frac{1}{2}$ hour. Then put in jars as before directed.

Tomato Jam. Use equal weights of sugar and tomatoes; peel and slice them, add the sugar, and let *simmer* gently until done, which should be in about an hour. A pleasant flavor may be imparted by tying lemon peel and ginger in a muslin bag, and letting it cook with the fruit, lifting it out when that is cooked.

PRESERVES.

The fruit used for preserves should be perfectly sound, fresh and ripe, and use good sugar. If you would have good preserves work carefully. A very large amount is less easily handled than less.

The old rule of pound for pound of sugar and fruit is hardly reliable, because fruits differ so much in sweetness. If too much sugar is used the fruit may be unpleasantly sweet, and very little of the fruit flavor left.

Cooking the Fruit.—Large fruits should cook until a broom straw will readily pierce them. To avoid burning, boil them gently. They must be soft enough to be readily penetrated by the sugar (as that is what preserves them) but that is all. Over boiling is to be avoided, and small fruit especially, like strawberries and raspberries, are spoiled if much cooked. The object aimed at is to have the sugar thoroughly permeate the fruit enough to preserve it, but without injuring its shape more than necessary. Fruit is darkened in color and its flavor injured by long boiling. Small fruits and berries should be taken out of the syrup, when done, with a small strainer, as a cup will not separate the syrup from them.

When the fruit has simmered in the syrup until done quite through, it may be taken out with a skimmer and set on dishes to cool; then boil up the syrup until it begins to jelly, put back the fruit, boil it up once, and then put it into jars. Another way is to put the fruit directly into jars instead of on dishes to cool; then boil the syrup and pour it over, and tie up as directed in the "General Suggestions" at the beginning of this section. Either method works well.

Hardening Fruit.—Those fruits like strawberries, tomatoes, peaches, apples, etc., which are liable in cooking to become too soft, can be allowed to stand a few hours with sugar on them, or pour on hot syrup; this hardens them by extracting the juice. There are some fruits like citrons, quinces, pineapples, etc., which harden if put into strong syrup at first; to avoid this they can be cooked first in water or weak syrup until tender, and then the balance of the sugar added.

Canned fruit can be used in making preserves, and then less sugar is needed. Adding a few slices of lemon or orange will improve the flavor.

Keeping Preserves.—Preserves keep better in glass than in earthenware vessels, but they should be wrapped in paper to keep the light from bleaching them; keep in a cool, dark, dry place.

To Clarify and Prepare Syrup.—A good syrup can be made with 2 pints granulated or loaf sugar, and 2 cups water; put them in a porcelain kettle, and stir in the white of 1 egg beaten light but not dry; bring it slowly to a boil, stirring frequently, and then at once move to the back of the range, cover it, and let it simmer gently, *not* boil rapidly, for $\frac{1}{2}$ hour; then take off the cover and remove the cake of thick white scum appearing on top. The syrup will be clear and ready for use. White of egg, being albumen, coagulates at 160°, and as it rises to the surface it acts like a strainer, carrying the impurities with it; hard boiling breaks it into small grains, and it does not strain well. Small fruits, like strawberries, raspberries, currants, etc., put into this syrup will retain their form, color, and their fresh and natural taste. Juicy fruits require a rich syrup, like the above, but dry fruits which require long cooking need a thinner syrup made of equal parts of water and sugar.

Graining.—A little acid added to syrup will prevent graining, as explained for candy making.

Apple Preserves.—Choose firm, well-flavored apples, and proceed as directed for quinces. They can be improved by adding the juice of 1 lemon to each $1\frac{1}{2}$ lbs. of apples; or cut up and add a little quince.

Preserved Apricots.—Stone and pare 1 lb. of the finest apricots, put them into a preserving pan, and dust on some double refined sugar; have ready and add 1 cup of the juice of white currants, pressed out of raw berries; use $1\frac{1}{4}$ lbs. loaf sugar, putting in half of it first, and adding the balance at 2 different times during the cooking. Boil them over a slow fire, and when done put them up, putting 2 or 3 in a glass; be careful not to break them in the skimming. A little more boiling makes it jam.

Crab Apple Preserves.—The red Siberian crab is the best. Pick out those nearly perfect, *leaving the stems on*; put them in the preserving kettle with enough warm water to cover them, heat this to boiling slowly, and simmer until the skins break. Drain and skin them; then with a pen-knife extract the cores through the blossom ends. Weigh them, allow $1\frac{1}{4}$ lbs. sugar and a gill of water to every pound of fruit. Boil the water and sugar together until the scum ceases to rise, put in the fruit, cover the kettle, and simmer until the apples are a clear red and tender. Take out with a skimmer, spread upon dishes to cool and harden; add to the syrup the juice of 1 lemon to 3 lbs. fruit, and boil until clear and rich. Fill jars $\frac{3}{4}$ full with apples, pour in the syrup, and when cool, tie up.

Barberry Preserves.—Use 1 lb. sugar and 1 cup water to 1 lb. of barberries; prepare the syrup and put in the barberries; let them cook until the syrup is quite thick, which will probably be in about 2 hours. Then put them up in jars with enough syrup to keep them. The rest of the syrup can be strained, put in bottles, and corked tight, and it can be used to make a delightful and a refreshing drink.

Blackberry Preserves.—Choose the best berries, pick them over, and allow 1 lb. sugar to 1 lb. berries; let them stand for 1 or 2 hours spread on dishes with the sugar sprinkled on; then put them on the stove in a porcelain kettle, adding all the juice which came from them, and heat slightly. Now take them out, putting them on the plates, and boil the syrup for 5 minutes rapidly; then put back the berries, and let them simmer (*not boil*); if they show a tendency to break, take them from the stove at once. Cool them slightly, and put in jelly glasses.

Currants and Dewberries are put up the same way.

Preserved Cherries.—Select short-stemmed red cherries, or Morellos, as sweet cherries are not suitable for preserving. Stone them, and save every drop of the juice; allow 1 lb. sugar to each pound of fruit; first put in a layer of sugar, then a layer of fruit, and so on until all are put in; let them stand 2 or 3 hours, pour over the juice, and boil gently until the syrup begins to thicken; then put in jars. Adding 3 tablespoons of red currant juice to each lb. of fruit is an improvement.

Currants may be put up the same way. *White currants* make fine preserves.

Citron Melon.—Pare and cut the melons into small pieces about $\frac{1}{2}$ inch square. Put in a porcelain kettle; cover with water and boil until tender, but not to break; then put them in a cloth strainer and hang up to drain over night. The next day weigh the melon, and with an equal weight of granulated sugar make enough syrup to cover the melon, then boil gently until the melon is clear. By this time the syrup will have become quite thick. Set away in the kettle to stand over night, or until it is cooled through. Allow 4 lemons to every pound of the pre-

serves. Squeeze and strain the lemon juice onto the preserves, and with the hand lift and gently mix all together, being careful not to break the cubes of melon. Put cold into glass jars; place a few cloves, from which the heads have been taken, on the top of each jar; screw the cover on tightly, and put in a dark cool place. It must be a month old before using. This is a delicious sweetmeat. Be sure that the lemons are not bitter.

Citron Preserves.—These should be made as late in the season as possible, when the melons are ripest. After paring, cut into fancy shapes, but not too small. Cook till tender, in just water enough to cover, with a large spoonful of alum added. Drain the pieces well, and then cook $\frac{1}{2}$ hour in the preserving syrup, with the juice of several lemons added, omitting the rind, as it is apt to impart a bitter taste. In a few weeks this citron may be taken from the syrup, drained, dipped in powdered sugar, and dried on plates in the sun, when it is very nice for cake, to add to its flavor and beauty. If this is to be done on a large scale, however, the pieces of citron should be quite large for convenience.

Cranberry Preserves.—Allow 1 lb. sugar to each pound of berries; make a strong syrup by adding water, using only enough water to dissolve the sugar; put in the fruit, boil until tender, and put into glasses.

Preserved Black Currants.—Pick over the currants and cook till all are broken. Add $\frac{1}{2}$ as much sugar (measured) as you have fruit. Cook $\frac{1}{4}$ hour longer and seal. This is excellent for a sore throat.

Fig Preserves.—Gather the fruit when fully ripe but not cracked open; place it in a perforated tin bucket or wire screen, and dip it for a moment in a deep kettle of lye, hot and moderately strong (some prefer to let them lay an hour in limewater, draining them afterwards). Allow 1 lb. of sugar to 1 lb. figs, make it into a syrup; drain the figs, put them in, and boil until well cooked; skim out the figs and boil down the syrup until there is just enough to cover the figs; put the figs back in the syrup, let all boil, put into glasses while hot, and seal.

Green Fig Preserves.—Lay the figs in cold water for 24 hours; then simmer them until tender; put them again in cold water, and let them remain 2 days, changing the water each day. Then if you do not find them soft, give them another simmer and put them again into cold water until the next day. Then take 1 lb. sugar to 1 lb. fruit, and with $\frac{2}{3}$ of it make a syrup and simmer the figs in it for 10 minutes. In 2 days take the remaining $\frac{1}{3}$ of the sugar and pour the syrup from the figs on it. Make a rich syrup, adding the peel of a lemon and a little raw ginger, and boil the figs in it; then mix all together and put into large jam-pots, and tie them closely over. The figs may be cut in half if preferred, after they have simmered until soft.

Tomato Figs.—These, although made from tomatoes, will nearly approach true figs, and will keep as long as desired. Select good tomatoes, scald, skin them, and allow $1\frac{1}{2}$ lbs. best brown sugar to each 4 lbs. tomatoes. Let them simmer gently in the sugar until they cook clear, and the sugar permeates them thoroughly (add no water), and then take them out and dry them, spread on dishes in the sun; while they are drying sprinkle a little syrup on them. Pack them in layers with sugar between, in boxes or jars. While drying do not let rain or dew fall on them.

Green Ginger Preserves.—Put the ginger for 2 weeks every night and morning into boiling water; then pare off the outside skin with a sharp knife. Boil it in water till quite soft, and slice it into thin slices. Prepare a syrup of 1 lb. sugar to $\frac{1}{2}$ pint water, clarify it, put in the ginger, and boil till it is clear. Let it cool before putting it in jars.

Mock Ginger Preserves.—Boil small tender carrots, scrape them until free of all spots, and cut out the heart or middle portion. Steep them for several days in frequently changed water, until the flavor of the carrot has been completely destroyed. Allow 1 quart of water, 2 lbs. sugar, 2 oz. whole ginger, and the thin peel (yellow only) of 1 lemon to each pound of prepared carrots. Boil $\frac{1}{4}$ hour daily until the carrots are transparent. When done, add enough red pepper to make the preserves as hot as desired.

Gooseberry Preserves.—Allow 1 lb. sugar to each pound of gooseberries; top and tail them, and put the berries and sugar into a deep jar in alternate layers; pour on enough red currant juice to dissolve the sugar and add the same weight of sugar; cook it next day in the preserving pan, and put it in glasses.

Green Gooseberry Preserves.—Top, tail and wash the gooseberries in cold water, and drain; then pour on boiling water and let stand a few minutes to scald; this will soften them and extract part of their acid; when tender, take them out with a skimmer and slip them into cold water, leave a few minutes and take out with the skimmer, and slide carefully into the syrup; have the syrup made with 3 cups water and $1\frac{1}{4}$ lbs. sugar for each lb. of gooseberries; let them simmer slowly in the syrup until quite clear—about 20 minutes; if they seem likely to break take them out sooner with the skimmer, and let the syrup boil a little longer; put them in the jars, and when cold pour on the syrup, and tie up.

Grape Preserves.—Pick from the stem, wash, drain, and weigh, and allow an equal weight of sugar; then press the skin from the pulp with the thumb and finger, and cook the pulp gently; when the seeds loosen pass it through a sieve to remove them. Then put the skins into the juice, cover, and simmer gently until tender; add the sugar, keep it hot, *without boiling*, 15 minutes, and can.

Greengage Preserves.—Prick the plums with a fine needle to prevent their breaking; put them into a preserving pan with only enough water to cover them, and set them over a gentle fire until the water simmers; then take them out and set them on a sieve to drain. Add to the water in which the plums were boiled 1 lb. sugar to 1 lb. plums; boil it quickly, skimming it as the scum rises, until the syrup thickens on the spoon; then put in the plums, let them boil until the sugar bubbles, and pour the whole into a basin; let it stand until the next day. Drain the syrup from the fruit, boil it up quickly, and pour it over the plums. Repeat this for 4 days, which cooks the fruit without injuring the shape; then boil it in the syrup for 5 or 6 minutes, put into jars, and pour the syrup over. The kernels must be blanched and boiled with the fruit.

Damsons can be put up the same way.

Huckleberry Preserves.—Use $\frac{3}{4}$ lb. of sugar and the juice of half a lemon to each lb. of huckleberries; put half the sugar on the berries, and let stand a few hours or over night; then drain off the juice, add 1 cup water, the lemon juice, and the balance of the sugar; set it on the stove till the sugar dissolves, boil quickly, and skim; then put in the berries and let it simmer merely until they are tender—about $\frac{1}{2}$ hour; then take them out, put in jars, and when cold, pour on the syrup and tie up.

Preserved Lemons.—Pare off the thin yellow skin carefully, cut a small hole in the end, scoop out the pulp carefully with a silver spoon, rub each one with salt and drop it into clear cold water as fast as finished, which will prevent its turning dark; let them lie in it for 5 or 6 days, and then boil them in fresh salt and water 15 minutes. Have ready made a thin syrup of 1 quart of water to 1 lb. sugar; drain, and boil them in this for 5 minutes, and repeat once a day for 4 or 5

days; then put them in jars with the syrup and let them stand 6 or 8 weeks, as that will make them clear and plump; then take them out of the syrup. Make a fresh syrup of double refined sugar, with only enough water to moisten it; boil and skim it, put in the lemons, and let them simmer slowly until they are clear. Put them in small jars, covered as previously directed, and tie them up tight.

Mulberry Preserves.—Put about $\frac{1}{2}$ lb. of mulberries into a preserving pan with 1 gill water to prevent burning; simmer slowly over a slow fire until all the juice is extracted; strain it through a fine sieve, and add $3\frac{3}{4}$ lbs. of sugar to each $1\frac{1}{2}$ pints juice. Put the sugar into the preserving pan, pour the strained juice on it, boil up, and skim it well. Then add 3 lbs. of ripe mulberries, and let them stand in the syrup until warm; then boil them slowly for about $\frac{1}{4}$ hour, and turn them out carefully into a china bowl until the next day; then repeat the boiling $\frac{1}{4}$ hour, or until the syrup is thick and will jelly when cold. Put into jelly glasses, set away to cool, and then tie up. Care must be taken not to break the mulberries when boiling.

Muskmelons.—Choose ripe muskmelons, remove the seeds, peel, cut in pieces, put into a stone jar, and cover with scalding vinegar; let them stand until the next day, pour off the vinegar, heat it, and pour on them again; repeat this every day for 4 days. To each 5 lbs. of fruit allow 1 quart of vinegar, 3 lbs. sugar, and spices to suit; put all together, and simmer until the melons are tender; then set aside, and the second day pour off the syrup, and boil it down so there will be just enough to cover the melons. Then put in glasses.

Preserved Oranges.—Select very ripe oranges, cut a small hole in the stalk end, and scoop out the pulp with a silver spoon very clean, and be careful not to break the rind; save all the juice by holding the orange over a bowl while scooping it out, and drop each one into a basin of cold water as fast as done; then drain them, put into a porcelain kettle, and pour on enough boiling water to cover them, having dissolved in it 1 teaspoon of alum to each $\frac{1}{2}$ gallon of water; let them simmer gently in this solution, until almost transparent and clear; now drain them, put into cold water, change it 2 or 3 times, and let them stand until next morning; then drain again, pour on boiling water to cover, and again gently simmer for $1\frac{1}{2}$ hours, and drain them; now allow 1 lb. of sugar and 1 cup water for each pound of the rinds, and make the sugar and water into a syrup; then put in the oranges, together with the juice which was saved, and gently simmer until they are clear and tender; then take them out, lay them on dishes to dry, and set away 2 days, and the syrup also. Now take 4 fresh oranges for each 1 which is being preserved, cut them in two, extract the juice, and allow $1\frac{1}{4}$ lbs. sugar to each pint of it. Put this sugar and juice on the fire, and as soon as the sugar dissolves, boil it quickly to a thick jelly, which should be in about 20 minutes; test it and it will be done if a teaspoon of it hardens at once when set in a saucer in a cool place. Now put this jelly into the oranges, filling them full, and let it harden until the next morning. Then put them in glasses with the opened end down, and pour on the first syrup, and tie them up. They will be found a delicious preserve.

Lemons and Limes can be put up in the same manner.

Preserved Oranges No. 2.—Select good oranges and boil them in soft water until you can run a broom straw through the skin. Allow $\frac{3}{4}$ lb. sugar for 1 lb. oranges, make it into a syrup, clarify it; then drain the oranges from the water, pour on the hot syrup, and let them stand in it over night. Boil them in the syrup the next day until it is thick and clear; then put them in jars, pour the strained syrup on them, and tie up.

Orange and Rhubarb Preserves.—Take 6 oranges and carefully peel off the thin yellow rind; remove the white rind and the seeds, and slice the pulp into a preserving pan, adding the yellow rind cut very fine. Add 1 quart of rhubarb cut fine, and 1 lb. to 1½ lbs. sugar, and boil the whole down and put up like any other preserves.

Peach Preserves.—Select fine ripe peaches; pare, halve and stone them; allow 1 lb. sugar to 1 lb. fruit, and put a layer of sugar in the kettle, then a layer of peaches, and so on alternately until all is used. Cover and let it stand until the next morning; then bring to a boil quickly, and let it *simmer* merely, until the fruit is clear and tender. Blanch and add 4 peach kernels for each pound of fruit, for flavor, when it begins to boil. Then lift out the fruit carefully, and put it into glasses; boil the syrup until thick (about 15 minutes) and pour it over.

Apricots and Nectarines can be put up in the same way.

Pears can be put up in like manner, but they should be pared; leave the stems on, and if small put them up whole. Add no peach kernels.

Preserving Peaches Without Cooking.—Brush the down from the peaches, and put them into a deep dish; pour enough boiling water on to cover them, and lay a thickly-folded towel over the dish, and let it stand until the water is nearly cold; then take out the peaches one by one and rub off the skins with a coarse towel. Then put a layer of sugar in a jar, then a layer of peaches, cover them thickly with sugar, and so on alternately, having sugar on top. Close and seal them down at once, and keep in a cool, dry place. Removing the skins by the use of hot water as above directed, is much easier than paring them.

Preserved Pears.—If large, they can be pared and quartered; if small, they can be pared and put up whole. Allow equal weights of fruit and sugar; make the sugar into a syrup, using 1 cup of water to the pound; when clear, put in the fruit and heat it through; then take it out and cool it; then put it back and cook until soft, and then put in jars. A clove stuck in the end of each pear before cooking imparts a pleasant flavor. Some people stew a few slices of lemon peel in the syrup for flavoring.

Preserved Pineapple.—Pare off the rough outside carefully, that nothing be lost, and slice the fruit; put it in a preserving pan, add 1 teacup of water to each pound of fruit, and boil gently until it is tender and clear; then take it out with a skimmer, add 1 lb. of sugar to 1 lb. of fruit; stir until it is dissolved, then put in the pineapple and let it boil gently until it is transparent throughout; then take out the fruit, cool it, and put it into glass jars. Let the syrup simmer gently until it is thick and rich, and when nearly cool pour it over the fruit, and the next day seal up the jars. Pineapple is often put directly into the syrup without first boiling in water, but it is then tougher and not so good.

Persimmons.—See "Keeping Provisions."

Preserved Plums.—(1) Weigh them and allow 1 lb. sugar to 1 lb. plums; put a layer of sugar in a stone jar, then a layer of plums, and so on alternately until all are in, finishing with sugar; now put them in a moderate oven, and leave them until the oven cools, or put them in at tea-time, and let them stay all night; then boil and clarify the juice, after straining it from the plums; put the fruit in glasses, pour on the hot syrup, and tie up. (2) Another way is to allow ¾ lb. sugar to each pound of fruit. Divide the plums, take out the stones, and put them on a dish with sugar strewed over; the next day put them into a preserving pan and let them simmer gently over a nice fire for about 30 minutes; then boil them quickly, removing the scum as it rises, and keep them constantly stirred, or

the fruit will stick to the bottom of the pan. Crack the stones, and add the kernels to the preserves when it boils. Then put up like other preserves.

Pumpkin Preserves.—Choose a good sweet pumpkin, pare, take out the seeds and cut into slices. Allow 1 lb. sugar and 1 gill of lemon juice for 1 lb. of pumpkin. Put the pumpkin in a deep dish in layers, with the sugar sprinkled between, and pour the lemon juice on top; let stand 2 or 3 days, and then boil all together, adding 1 cup water for each 3 lbs. sugar used, until the pumpkin is tender; then let it stand for 1 week, when drain off the syrup, boil until it is quite thick, skim, and pour it hot over the pumpkin. A little bruised ginger and lemon rind thinly pared may be boiled in the syrup to flavor the pumpkin.

Quince Preserves.—Take fine yellow quinces, and pare, quarter and core them (save cores and skins); add just water enough to cover the quinces, set them on the stove and simmer until soft, but not until they begin to break; carefully remove the fruit, spread it on dishes to cool, and into the water in which the quinces were boiled put the cores, seeds and parings; stew it 1 hour, covered closely, and strain it through a jelly bag; add 1 lb. sugar for each pint of this liquor, boil it up, skim, and put in the quinces, and boil gently 25 minutes; let it stand in a deep dish, closely covered, 24 hours; then drain off the syrup, bring it to a boil, put in the fruit carefully, and boil $\frac{1}{4}$ hour; then take it out as dry as possible, spread it on dishes to cool, and boil the syrup down thick; fill jars $\frac{3}{4}$ full of the fruit, and pour on the syrup. The preserves should be of a fine red color. An equal amount of sweet apples can be cooked with the quinces (and without additional sugar), and the difference will hardly be noticed.

Strawberry Preserves.—Select the largest berries, and use equal weights of strawberries and sugar; lay the fruit in deep dishes, and sprinkle $\frac{1}{2}$ the sugar over them in fine powder; shake the dish so that the sugar may touch the under part of the fruit. The next day make a syrup with the remainder of the sugar and the juice drawn from the strawberries and boil until it jellies; then put in the strawberries carefully, and let them *simmer* nearly an hour. Put them carefully in glass jars and fill up with the syrup; there will be more than enough to fill the jars, but after standing over night the jars will hold more. Any syrup remaining can be used in making pudding sauces, etc. Putting strawberries up whole thus, is much the best way.

Raspberries can be put up the same way.

Green Tomato Preserves.—Select small, even-sized tomatoes for preserving. To each 3 lbs. tomatoes take 2 fresh lemons; pare off the yellow rind thin, so as to leave the white part, and squeeze out the juice. First boil the tomatoes in water sufficient to cover them, until they begin to get tender; add the lemon and a few peach leaves and powdered ginger tied in muslin bags; boil together until the tomatoes are tender, take them out carefully, strain the liquor, and add to it $1\frac{1}{4}$ lbs. sugar for each pound tomatoes; put the tomatoes back into the syrup, and boil until they appear to be done. In the course of a week pour the syrup from the tomatoes, heat it scalding hot, and pour it again on the tomatoes; then tie up.

Ripe Tomato Preserves.—For these use for 8 lbs. tomatoes, 7 lbs. sugar, and the juice of 4 lemons. Peel the tomatoes, and let lemons, sugar and tomatoes stand together over night; drain off the syrup and boil it, skimming it well; then put in the tomatoes and allow them to boil gently and steadily for 20 minutes. Take them out with the skimmer and spread them on dishes to cool. Boil down the syrup until it thickens, put the tomatoes in jars and pour the syrup over them hot.

Preserved Watermelon and Cantelope Rinds.—It is a good plan to keep these rinds in a strong solution of salt and water until they are needed for preserving; the salt can then be removed by boiling them in fresh water. Now soak them in alum water (have it weak) for a little while, and then again boil in clear water until the alum taste disappears. Allow for every pound of rind 2 lbs. sugar, and make it into a rich syrup, clarifying it; then boil the rind for 1 hour in this syrup. Adding a little acid will keep the syrup from graining. Flavor with lemon if desired.

CANNING FRUITS, VEGETABLES, ETC.

When it is properly done fruits and vegetables canned at home are both better and cheaper than those bought at stores. Select sound, fresh fruit, and use good sugar.

The first record of canning appears in a paper submitted to the English Society of Arts in 1807, by Mr. Saddington; but M. Appert who first put it into use on a large scale (about 1809) has generally received the credit for its discovery. Canning in its present form dates from a patent granted in 1823 to Pierre Angilbert.

THE PRINCIPLES INVOLVED.—The principles underlying the process of canning have been quite generally misunderstood, and successful fruit canning has been by many people supposed to depend upon the observance of certain methods which would result in the expulsion of the *air*, and the directions have been to boil fruit to expel the air, to heat the jars very hot, to stir the contents that all air bubbles may escape, to fill to overflowing, and seal immediately. It is impossible by any heating process to expel *all* the air. However full jars may be filled with hot fruit, when cold there is more or less air at the top. The correct reason for heating fruit is not to expel the air, but to destroy minute, living germs (*bacteria**) that to a greater or less extent are always floating in the air, and which alight upon fruit and all other substances. These germs especially abound in the atmosphere in the season when fruits ripen. Under favorable conditions they multiply with marvelous rapidity, and in a remarkably short space of time entirely change the composition of fruit and its juices. This disorganization of the fruit takes place to a greater or less extent according to the readiness with which the germs find access thereto, and the favorableness of the surrounding conditions. Experiment has demonstrated, beyond a reasonable doubt, that most of the bacteria which produce fermentation (for there are many varieties of them) cannot exist in a temperature above 140°, and nearly all die at 130° to 135°. The spores, however, (corresponding to seeds) are more tenacious of life than the developed bacteria, but these are all killed at the temperature of boiling water if submitted to its action for some time, for they do not all die *instantly*, even at that temperature. It should also be said that the bacteria flourish best in a neutral or alkaline solution, while an acid solution is unfavorable to them, and the acid nature of many of the fruit juices hastens their destruction. Furthermore it is difficult to arrange so that the central parts of a can shall receive the same amount of heat as the surface, particularly in the case of solidly packed goods, like corn and beans, so that they need to be cooked for some time. These being the principles involved, canning resolves itself simply into killing all the bacteria and spores, and preventing any new ones from obtaining access to the fruit, and the simplest and most effectual method of doing this is the best.

Fruit has often been cooked more than was necessary, but the housewife need not be troubled by having her fruit "go all to pieces" and get "mussy" when being canned, if she handles it intelligently. Enclosing air in the can when it is sealed will do no harm, *provided* such air has been heated hot enough to kill all germs floating in it. If the cans are not sealed perfectly *air tight*, cold, unsterilized air will in time enter the can, carrying in living germs. These are so infinitesimally small that they will pass through the most minute opening and they will then begin to propagate, and cause fermentation.

The Breaking of Jars.—If fruit is put into jars and the jars put in a boiler, surrounded with water and boiled, the jars are liable to crack if set directly on the metal bottom. Breaking will be prevented by putting several thicknesses of wet cloth under the jars; or use strips of wood, or hay or straw. Wrapping the jars in hay or straw simply keeps them from touching each other and allows the water to circulate around them freely.

A fruit jar for canning hot fruit need never be heated by rolling in hot water or otherwise; a cloth wrung from cold water and completely swathing the jar will insure against cracking, if the jar is perfect, and if it is not it will be likely to crack in any event. The cloth should be soft, and touch the jar in every part, and cover the glass well at the top.

Utensils.—See what we say about "The Utensils Used" in the introduction to

* *Bacteria* and *microbes* are terms applied to minute organisms which abound everywhere, and which play an important part in the economy of nature, causing both fermentation and putrefaction. They are rather more like plants than animals, and so small are they that the most powerful microscope makes them appear as little more than dots and rods. There are many varieties, but in shape they take principally 3 different forms which may be compared to a lead pencil (those having this form are called *bacilli*), a ball (called *cocci*), and a corkscrew (called *spirillum*).

our previous chapter on "Jams, Jellies", etc., for the action of the acids in fruits on tin, copper, etc.

Peaches.—If peaches are dipped in scalding hot water for a minute (some use hot lye) and then into cold water, the skin will readily slip off. If the stones are cracked and the kernels slightly cooked in the syrup which is poured over them it will be an improvement. The tastelessness of canned peaches sold in the stores often results from not doing this.

Pare fruit with a silver or aluminum knife and use forks of the same metals—steel will discolor it. Drop it in cold water as soon as pared, which will prevent its turning dark.

To soften hard fruits, like apples, pears, hard peaches or quinces, steam them; or cook in water till tender.

Using Sugar.—Although fruits can be canned without sugar many fruits are improved by the use of more or less of it; it improves those fruits when canned which require it when fresh. Fruits which are to be used for flavoring ice creams and water ices, are best canned without sugar. If sugar is sprinkled on small fruits, and left on 1 or 2 hours, they retain their shape better. Any surplus juice from strawberries or other small fruits, can be made into jelly.

Strain syrup which is not clear through fine flannel.

Sealing.—When fruit is otherwise properly put up it often fails to keep because of improper sealing; covers should be screwed on reasonably tight at first, and tightened often till quite cold; the glass shrinks by cooling, and the covers should be tightened up on it as it shrinks. Be sure the rubbers used are close fitting and firm.

If corks and wax are used in sealing, soak the corks in hot water; dry both cork and the edge of the bottle with a hot cloth before applying the wax, to insure close adherence to the glass.

Paraffine paper tied or pasted over heated fruit will keep it sweet for quite a time in summer, and for weeks in cold weather. It is also recommended for covering jellies and jams, as it is impervious to air and is water-proof.

Keeping.—All goods canned in glass (and that is the safest and most reliable thing to use) should be kept in the dark, or the cans wrapped in paper, as the light will bleach and injure many fruits, especially tomatoes and strawberries. Canned fruit and vegetables should be kept in a cool, dry and dark place.

The flavor of canned fruit is improved if it is opened some time before it is needed for use, and allowed to aerate.

Vegetables intended for canning should be as fresh as possible, as wilted vegetables will not can well.

The Food Value of Canned Goods.—A careful analysis of the canned goods sold in the market has shown that they should be regarded mainly in the light of an expensive luxury. This is owing principally to the large amount of water which they contain. In such articles as corn and string beans a test has shown that the contents of the can consists of 35% to 95% of water, so that if one bought 100 lbs. of these goods he would buy 65 lbs. to 95 lbs. of water, and only 5 lbs. to 35 lbs. of dry food material. For this reason 10 or 25 cents invested in flour, cornmeal or meat, will get as much actual food material for the body as \$1 or \$2 will if invested in canned goods. Poor people, and those of moderate means, should understand these things. When, however, the goods are canned at home the food is, of course, bought uncanned, and as cheaply as it could be obtained in any form. If properly put up canned goods are wholesome.

A WORD OF CAUTION.—Sometimes goods which are put up in tin cans, and which are all right when opened, are allowed to stand afterwards exposed to the air, and then the acid they contain will at once attack the lead in the tin, producing poisonous compounds of lead. For this reason the contents of tin cans should be emptied out *at once* on being opened. So important is this that it should be understood by every one.

Salicylic acid has been often used in canning fruits, and many agents have passed through the country selling recipes or preparations guaranteed to preserve fruit, the active ingredient of which was salicylic or some form of sulphurous acid. These should never be used. They may injure the health of the consumer, they impair the taste of the fruit, and their use is wholly unnecessary, as fruit is easily canned successfully without them. Don't buy or use such preparations.

Canning Berries, etc.—To can small fruit, or those which require little cooking, such as berries, peaches, etc., allow for every quart jar 1 teacup of sugar, more or less according to the acidity of the fruit. Dissolve the sugar in a very little water, put the fruit in it and heat to the boiling point; swathe each jar with a wet cloth, fill it with fruit, and seal it at once while hot.

Canning Apples.—Select choice apples, pare, quarter, core, and let *simmer*

merely until tender; then drain them out, put into hot syrup, boil 2 or 3 minutes, and fill hot into jars. The juice and rind of 1 lemon to 4 lbs. apples imparts a pleasant flavor. Using 1 lb. of quinces or 1 good-sized pineapple to 4 lbs. apples also makes a pleasant combination.

Canning Currants.—Use $\frac{3}{4}$ lb. sugar to 1 lb. fruit; let the fruit stand 2 or 3 hours covered with the sugar in the preserving kettle; then bring slowly to the boiling point, fill into jars and seal.

Raspberries are nice put up with *currant juice*; allow 1 cup currant juice and 1 cup sugar to each quart of raspberries, add the juice and sugar to the berries, bring to the boil, and put in jars. *Red raspberries* and *red currants* are also very nice canned together half and half.

Dewberries and *Elderberries* can be put up like currants, but allow $\frac{1}{4}$ lb. sugar for 1 lb. fruit.

Canning Damsons.—Allow $\frac{1}{2}$ lb. sugar to 1 lb. fruit; place alternate layers of sugar and plums in a preserving kettle, first pricking the plums to prevent their breaking; let stand 1 or 2 hours at the back of the stove, then heat gradually just to the boiling point; fill into jars and seal.

Greengages or *Plums* of any kind, can be canned the same way, but allow $\frac{3}{4}$ lb. of sugar to 1 lb. fruit. They can be allowed to stand in alternate layers of plums and sugar over night if desired; the next day bring to a boil and can.

Gooseberries.—These when ripe can be put up like currants, allowing $\frac{1}{2}$ lb. sugar to 1 lb. gooseberries. Green gooseberries are best put up by the "Cold Process" (which see).

Canning Pears.—Steam them until tender in a steamer; then put them into jars and fill with boiling syrup, holding in solution for each jar $\frac{1}{4}$ teaspoon of tartaric acid dissolved in a little water. This acid gives a piquant flavor to the otherwise sweet or insipid fruit, and is harmless.

Rhubarb.—The simplest and best method for this is by the "Cold Process" (which see).

Canning Quinces.—Pare, quarter, core, and let them *simmer* merely, in water until tender; then drain them from the water, put them into the hot syrup (allow $\frac{1}{2}$ lb. sugar and 1 cup water to 1 lb. quinces), let simmer 10 minutes (at 170°) and put into jars. The core, seeds and parings can be made into jelly.

Canning Grapes.—Grapes may be canned whole without the usual process of scalding. Heat the jars very hot by steaming them over water brought gradually from tepid to boiling heat, or by placing them in the oven on several thicknesses of paper, and increasing the heat gradually. Wring a towel from *hot* water and swathe the cans; then fill them with the cold grapes, cover with boiling water, seal, and let stand 10 minutes; then take off the covers, pour off the water, and cover with boiling syrup sweetened to taste, and seal. The skins will not break, and the fruit will have a very different flavor from seeded grapes.

Blackberries, *Huckleberries*, and *Raspberries* may be canned as directed for grapes.

Strawberries.—To preserve the color and flavor of strawberries requires care. They should go directly from the field or garden to the preserving kettle—even washing them injures their keeping qualities. Use $\frac{1}{2}$ lb. sugar to 1 lb. fruit. Place alternate layers of sugar and berries in a preserving kettle and let stand 1 hour; then heat slowly just to the boiling point; fill into jars and seal hot.

Canning Apricots.—Pack them whole into the jars, packing them full, and as closely as possible without mashing or pressing the fruit; fill the jars with syrup up to the shoulder, put on the cover loosely, and set them in a wash-boiler so

that they do not touch the metal bottom, as directed in the introduction to this chapter, and fill water around them up to their necks; put on the cover, bring it to a boil, and keep it boiling 12 to 15 minutes, so that the fruit in the jar may be heated clear through; then remove from the stove, fill 1 jar at a time with hot syrup (have some surplus syrup ready, and bring it to a boil at the same time as the fruit), screw on the cover, set it back in the water, and let all cool together. Practically this is a very good method, as it kills all germs, without over-cooking the fruit.

Cherries, Plums, Nectarines and Strawberries can be put up as directed for apricots.

Peaches can be put up the same way, but they should be pared and halved; if 2 or 3 kernels are put in the center of each jar they will flavor all the fruit in it; and this should be done, as they lack flavor without the kernels.

Pineapples can be put up the same way, but they should be first pared and sliced, using a silver knife.

Canned Corn.—Select young tender ears, cut the corn carefully from the cob with a very sharp knife, and scrape the cob with the back of the knife to secure the milk. Dissolve 1 oz. of druggist's pure tartaric acid in a large teacup of warm water, and use $\frac{1}{2}$ of this for every 4 quarts of corn; to be exact, measure by table-spoons. Stir the required amount into the corn, add 2 teacups of hot water, and cook 15 minutes. Stir often and thoroughly while cooking; then can in the usual way. On opening for use, to each quart add a level teaspoon of soda (to neutralize the acid), cook 5 minutes and season to taste, being careful to add a little sugar. Should the corn turn yellow on adding the soda, add a very little more acid water (some may be kept corked); should there be a slight acid taste, put in a little more soda. If the acid is impure, or too much is used, crystals will form.

No. 2.—Another method is to crowd corn cut from the cob into glass jars, seal moderately tight, set them into cold water, bring it to the boil, and then boil 3 hours; then loosen the covers an instant, seal again and cook 1 hour; then remove from the fire. Tighten the covers occasionally as the cans cool. Corn put up this way keeps perfectly, but it is not as fresh as that put up with acid, and the process is more tedious. In serving this corn all that it needs is to get it thoroughly hot, and add a little milk or cream, butter and seasoning; further cooking toughens it.

Canned Peas.—Shell them, and pack closely in cans; add to each quart 1 teaspoon salt and 1 teaspoon sugar dissolved in a little water; fill them full of water, put on the covers, and proceed as directed for apricots, but keep the water boiling 3 hours; fill hot water into the boiler, as that in it cooks away; when done, screw down the tops, and let them cool.

Asparagus.—Put it up as directed above for peas, but omit the sugar and salt.

Lima Beans.—Treat as directed above for peas, but omit the sugar.

String Beans.—Either green or cream beans can be put up as directed above for peas. String them, cut into inch lengths, put into cans, add to each quart 1 teaspoon of salt, and continue as directed for peas.

No. 2.—String the beans and remove the stem end. Boil them in water until about half tender, then to each 4 quarts of beans add $\frac{1}{2}$ pint of salt; boil 10 minutes, put in cans, cover well with the liquor in which they were boiled and seal. To use, drain, cook in a little water, and season to taste with cream or butter. A very little white sugar added to the seasoning is an improvement.

No. 3.—Another method is to boil the beans in slightly salted water until they

are tender, but not until they break; then drain quickly and can, covering them with weak boiling vinegar, or vinegar and water. To use, drain them, soak in warm water 15 minutes, heat 5 minutes, and season with butter and a little milk, thickened slightly with corn-starch.

Canning Cabbage.—Slice cabbage when it comes from the pits in the spring, cook it in very little water, season with salt, and can boiling hot.

Canning Carrots.—Boil carrots till tender, peel and slice, reheat them in a steamer and can, covering them with weak boiling vinegar, or vinegar and water. Use them as a garnish, or season with cream for a salad.

Canned Beets.—Chop beets while tender, season with sweetened vinegar, and can hot. They make delicious salad.

Pumpkin.—Scrape out the seeds after cutting it up, and either stew or bake it until tender, without paring, as the sweetest part lies next the rind; when baked, remove the rind, mash with the potato masher, put it in jars and seal while hot. Add no seasoning until opened for use.

Canned Succotash.—Put lima beans in salted water, and cook nearly enough for table use; take green corn on the cob, and boil until when a grain is cut no milk flows, then cut it from the cob, and mix with the lima beans, using 1 measure of beans to 2 measures of corn; cover them with boiling water, bring to a boil, and fill them into glass jars. String beans can be used instead of lima beans, but cut them into 1 inch lengths. To use this succotash, drain off the liquor and add butter, milk and flour the same as for fresh succotash.

Canned Tomatoes (Whole).—Select good small ones, rejecting all that are soft or spotted; put them whole into the cans without peeling, fill with cold water, and proceed as directed for peas, but omit the salt and sugar, and boil only $\frac{1}{2}$ hour.

Tomatoes No. 2.—Select the tomatoes before they are ripe. As soon as they are gathered from the vines remove the skins, cut them in small pieces and drain; boil them 20 minutes, stirring often, and adding salt freely while boiling. Can in the usual way. One can determine by tasting just how much salt can be used. They are less likely to sour when salt is used.

Tomatoes No. 3.—Scald and skin them; bring them gradually to a boil in the preserving kettle, and let them simmer merely $\frac{1}{2}$ hour (at 170°); put into the cans while hot, and seal.

Canned Tomatoes are nice stewed and baked in alternate layers with boiled rice or boiled macaroni, seasoning the layers with butter, pepper and salt.

Canned Tomatoes with Corn.—Boil the corn on the cob the same as for table use, and cut it off while hot; have tomatoes skinned and rubbed to a smooth pulp; put 2 parts tomatoes to 1 part corn, salt as for the table, bring to a hard boil, and can quickly.

Canned Beans with Acid.—Cook the beans until done; then add for each pint of beans 1 tablespoon of a solution made by dissolving $1\frac{1}{4}$ oz. tartaric acid in 1 cup water; can at once while hot. To use, to each quart of beans add $\frac{1}{4}$ teaspoon of soda to neutralize the acid, and let stand a little while before cooking. Then season and serve. If there is a slightly acid taste use a little more soda; if too much soda is used add a trifle more acid.

Peas can be put up the same way.

Fruit Juices.—Select the best fruit, squeeze out the juice, strain it through fine muslin (4 thicknesses) or through flannel cloth, add sugar in the proportion of $\frac{3}{4}$ lb. sugar to 1 quart of juice, and bring to a boil; use an earthen or porce-

lain-lined kettle, remove all scum which rises, and put while hot into small bottles, and keep closely corked; or it can be kept in Mason jars.

When canning fruit the juice remaining can be bottled in the same manner. For pudding sauces, etc., these can be used in place of wines and intoxicating liquors, as we have elsewhere stated in speaking of intoxicating liquors; they can also be used for water ices and summer beverages.

Fruit juices can also be put up without the use of sugar; strain the juice, and fill it into the bottles to the bottom of the neck only; then cork securely, wire the corks down, and set the bottles into water up to the neck; let it boil $\frac{1}{2}$ hour, then take from the stove, let them stand in the water till cold, and seal the corks. Juices put up this way can be used like fresh juices, but when exposed to the air they spoil quickly, so that all must be used at once when a bottle is opened. Small bottles are therefore best.

CANNING WITHOUT SYRUP.

Fruit can be put up much as directed for apricots, but without using any syrup. The fruit should not be very ripe when picked; fill wide-mouthed bottles as full as they will hold, cork and seal each one tightly, surround it with water and boil as there directed; then remove from the stove and let them cool standing in the water, tightening the covers occasionally. It will be found to nearly equal fresh fruit when opened, and can be used like it. *Apricots, cherries, gooseberries, sliced pineapple, plums*, and other fruit can be put up thus.

CANNING BY THE COLD PROCESS.

Many fruits may be canned by what is termed the "Cold Process." It is best to boil the water used for this purpose, to kill all germs in it; then let it get cold before using it.

Green Currants and Green Gooseberries.—To can them in this manner fill jars with the green fruit, shaking it well together; fill with water which has been boiled and allowed to get perfectly cold; seal, wrap each jar in paper, and set in a cool place.

Grapes (Cold Process).—Remove them from the large clusters in smaller clusters of 2 or 3, being very careful indeed that the stem of each grape is in no wise loosened from the fruit; fill the jars with these clusters, or with the single grapes if preferred, with the stems left entire or partly clipped; when full (do not shake, as the success depends upon the stem adhering to the fruit) immerse the jar in a pail of water which has been boiled and become cold; when the jar is quite full of water screw on the top while under water.

Cherries (Cold Process).—The stems of cherries may be clipped and the fruit canned in the same manner as grapes. It is more difficult to prepare cherries, as they loosen so easily from the stem.

Canned Peaches (Cold Process).—Pare and halve the fruit, fill a jar with it, packing closely, and fill the jar with water as for currants; cover and let stand 6 or 8 hours for the water to work its way into all openings; then fill in water to take the place of that which has worked in, and seal. Thus put up all the freshness and flavor of the fruit is retained. Instead of the water cold syrup can be used, but the natural flavor is best retained without any sweetening.

Canned Rhubarb (Cold Process).—Take fresh green stalks, peel and slice as if for pies; then take fruit jars and pack this in up to the necks, and then fill the jars with cold water; now seal up air tight and it will keep any number of months. To see if the jars are tight set them bottom up for a little while and see if any

water escapes; if not, they are all right. To use it, pour off the water and use like fresh pieplant; but to sweeten it, not over $\frac{1}{2}$ the sugar ordinarily used will be needed, as the water will extract some of the acid. The method is simple, and it will be equal to fresh pieplant when used.

Strawberries Canned Cold.—To each lb. of fruit allow 1 lb. sugar; dissolve the sugar in the least possible quantity of water, put in the strawberries and let both boil up together once thoroughly; then put the fruit and syrup in deep earthen pie plates, and let stand in the sun 24 hours covered with mosquito netting; or, dry it in a cool oven; then can cold. Delicious.

Currants and other small fruit may be canned the same way.

CANNING MEAT.

Do not leave meat designed for canning exposed to the air; as soon as it is thoroughly cold, after killing, prepare it by selecting pieces free from blood. Remove all bone, gristle and inferior pieces, and cut it into suitable pieces for the table, having them rather thin than otherwise. On the bottom of a Mason's self-sealing can put a little salt, pepper, and a dash of pulverized, sifted saltpetre; then put in a layer of meat, and on that sprinkle more of the same seasoning, and so on alternately, filling the can to within an inch of the top, pressing the layers down firmly while packing that there may be no air spaces. On the top layer use the seasoning more freely. Fill the can with lard, heated sufficiently to run smoothly. Cover with a paper bag, and keep in a cool, dark place. It will keep from January to July.

No. 2.—Take fresh beef and boil it until all the bones will come out; then take the meat out, remove the bones and cut in short lengths, returning it to the liquor; season to taste with salt, pepper, a little mace, cloves and chopped onions, if liked. Take the meat from the liquor with a wire dipper, fill it into the cans, pour on the boiling liquor, and seal tight. Keep in a dark, cool place.

Canned Corn Beef.—Before the brine sours or changes in the least, boil the meat till tender; then remove the bone, gristle, and white fiber, return to the boiling liquor, and when hot can it, pressing it *compactly*; cover it well with the boiling hot liquor and seal. Keep the cans in paper bags in a cool cellar. Examine on the approach of warm weather, and if on shaking the cans any bubbles arise, open such cans and use the meat at once.

Pickled Tongue is also very nice put up in this way.

Mince and Sausage Meat must be put into cans while at boiling heat, if thus preserved.

PRESERVING MEATS.—All the resources of science have been called into play to devise means to preserve meat so that the surplus of one region can be transported unimpaired to supply the needs of another region less bountifully supplied. The most important methods which have been devised are by drying, by cold, by heating and excluding the air, and by the use of antiseptics. They are all based on killing or preventing the development of the germs (bacteria) which cause putrefaction. *Drying* preserves meat and vegetables because the low forms of life, as well as the higher, cannot develop without a certain amount of moisture, but the flavor and other qualities of meat are not improved by drying. *Freezing* preserves the meat because cold checks the growth of all micro-organisms. In *canning*, the usual method is to heat the article enough to kill all the germs, and then seal it up so tightly that no more can enter. *Antiseptics*, like salt, sugar, etc., act by preventing the development of the micro-organisms which cause decay. The action of salt is to draw the juices and many of the nutritive elements out of the meat, and when they are once drawn out they can never be restored again, so that salted meat is never as nutritious as fresh meat. The salt also hardens the fiber of the meat and makes it less digestible. Salt has a whitening effect on the meat also, and to counteract that, saltpetre is often added, but the latter tends to make the meat hard, dry and indigestible, and therefore a little cochineal is sometimes used for coloring instead.

PICKLES, CATSUPS, AND VINEGAR.

The custom of pickling seems to have been practised since very early times, the ancient Greeks and Romans highly esteeming their pickles made from herbs, roots and vegetables preserved in vinegar.

All vegetables and fruits used for pickles should be sound, and not over ripe. Fruits can be pickled as well as vegetables.

The Vinegar.—Use only pure vinegar in making pickles, catsups and sauces. Cider vinegar is usually considered about the best for this purpose. As vinegar is weakened by boiling, it should be merely brought to the scalding point, and then poured on the pickles; if not scalded, but put on raw, however, it will not keep well. Have the vinegar strong or the pickles will seem “insipid.” If the strength of the vinegar is lost, replace it with some which is strong, and boiling hot when poured on. Adding a little horseradish will help to keep up the life of the vinegar, but use it sparingly; 1 or 2 clusters of green grapes serve the same purpose. To heat vinegar a good way is to put it in a stone jar in a sauce-pan, with hot water around it, and as soon as it reaches the boiling point remove from the fire, as boiling reduces both its strength and flavor.

Vinegar can be kept from molding by putting into each jar some horseradish, mustard seed or nasturtiums, but use only a little.

Using Alum and Parboiling.—If articles to be pickled are parboiled or scalded they will absorb the vinegar more readily, but they will not be so crisp. Cucumbers and gherkins are made crisp and green by dissolving a small lump of alum in the vinegar the first time it is scalded, but it is injurious to the health if too much is used.

Coloring Pickles.—A green color can easily be obtained, if desired, by soaking cabbage or vine leaves or the leaves of parsley or spinach in the vinegar, and the color thus obtained is harmless. Or to have cucumbers green put them into cold vinegar and heat them slowly over a moderate fire until they become green.

A CAUTION.—Bright green pickles have been popular, merely because of their looks. To gratify this taste pickles have been boiled in copper kettles with vinegar and a little alum. The acetic acid of the vinegar acts on the copper and forms acetate of copper, which is commonly and well known as *verdigris*. This penetrates the pickles and colors them green, but it should be understood that this acetate of copper (*verdigris*) is really a most active poison, and that pickles thus prepared are *poisonous and unhealthy*.

Spices.—Use spices judiciously so that all combine into a pleasant flavor without having one flavor predominate over all the others, and do not flavor so strongly as to entirely disguise the original flavor of the article pickled.

Brine.—The rule for the brine used for pickles is “strong enough to float an egg.” The proportion is about 1 quart of water to 1 cup salt.

The Kettle, etc.—Use porcelain-lined or granite kettles for putting up pickles. The acid in vinegar will act on the lead in tinned vessels, and produce the poisonous acetate of lead, and in brass or copper vessels it produces the poisonous acetate of copper (*verdigris*). As the mild acids, however, do not affect aluminum, utensils made of that metal are excellent to use for this purpose.

Use wooden spoons instead of metal spoons or forks. If, however, any metal spoons or forks are used have them either of aluminum or silver.

Keeping Pickles.—Pickles will become soft and spoil if exposed to the air, so that they should always be kept covered with vinegar; there should be 2 or 3 inches of vinegar over them; keep the jar tightly closed. If pickles show signs at any time of becoming moldy or soft, pour off the vinegar, scald it, skim, add to each gallon of vinegar 1 handful of sugar, and pour it back on again, boiling hot. The sugar will form fresh vinegar and so strengthen the old. If pickles are put in jars and sealed while hot, they keep better than in any other way.

Pickles should be kept in a dry, cool place, but they will be spoiled if they freeze. They are best kept in stone or glass; never use glazed jars, as the salt and vinegar will dissolve out the little lead which is used in glazing, and form the poisonous acetate of lead. No vessel which has held grease should be used for keeping pickles.

Pickles are an agreeable addition to our food, but they should be eaten sparingly, as they are not easily digested.

SOUR PICKLES.

Artichokes.—Take a strong brine and boil the artichokes in it 2 or 3 minutes; then drain them on a sieve, and put in jars when cold. Boil some nutmeg, mace and ginger in enough vinegar to cover; pour it on hot and seal the jars.

Beans.—String the beans and boil until tender, putting a little salt in the water; then drain in a colander, and when cold put in jars; add 1 tablespoon of horseradish, sprinkle with cayenne pepper lightly, and cover with good cider vinegar.

Pickled Beets.—(1) Wash them, and be careful not to prick the outside skin or they will lose their beautiful color; put them into boiling water, simmer gently until $\frac{3}{4}$ done (about $1\frac{1}{2}$ hours), take out and cool; then peel, and cut into slices $\frac{1}{2}$ inch thick. Take vinegar enough to cover, add 2 oz. allspice, and 2 oz. whole pepper to each gallon, and boil 5 minutes; when cold, pour it on the beets, and cover closely. They can be used in a week. (2) Another way is to take 4 or 5 medium-sized beets, boil them soft, put in cold water, rub off the skins, wipe dry, cut in pieces, and chop finely in the chopping bowl; add, while chopping, an even teaspoon of salt and sugar, a saltspoon each of mustard and pepper; pack into a salad dish or bowl; cover with cold vinegar, and let it stand until the next day before serving.

Carrots may be pickled in the same manner. Few people know how good carrots are when pickled.

Pickled Cabbage.—Slice the cabbage fine, and cover with boiling water; drain off the water when cold. Season with red and black pepper in equal parts, salt, cinnamon and cloves, and grated horseradish. Cover with strong vinegar.

Pickled Cauliflower.—Break the heads into small pieces, and boil in salt and water 10 or 15 minutes; then drain carefully, and place in jars when cold; tie white mustard, cloves, allspice and pepper in a bag, put it in vinegar, and scald; take the vinegar from the stove, take out the bag, and to each quart add $\frac{1}{2}$ cup sugar, and 1 tablespoon of mustard; pour it over the cauliflower, and cover tightly.

Celery Pickles.—Take $\frac{1}{2}$ gallon of chopped celery, the same of chopped white cabbage, 4 oz. white mustard seed, $\frac{1}{2}$ oz. ginger root, 2 tablespoons salt, $\frac{1}{2}$ oz. turmeric, $\frac{1}{2}$ cup sugar, $\frac{3}{4}$ gallon cider vinegar; let all simmer gently until celery and cabbage are tender; then put in jars.

Cherry Pickles.—Take large, ripe cherries, leave the stems on, and put them whole into cans, filling them only $\frac{2}{3}$ full; take good cider vinegar, fill the cans with it cold, and seal, without heating.

Pickled Corn.—Select good corn and boil it on the cob; when done let it cool, and cut it from the cob; then pack it in a jar in alternate layers of salt and corn, having salt at the bottom and on top; then spread on a cloth, lay on a board, and weight it down. For use; soak it till fresh in water, and cook or heat it. Many like it better this way than when canned.

String Beans and Lima Beans can also be packed in salt; after being in the salt 2 days they can be used at any time, and can be cooked like green vegetables, but while boiling, change the water 1 or 2 times. They will be like fresh vegetables.

Cucumber Pickles.—Cut cucumbers from the vine instead of twisting or pulling them off, as that injures them. Fill a jar with cucumbers, and pour

boiling water over them, with a little salt; let stand 6 hours or over night, and then put them into cold vinegar. To 1 gallon of vinegar add 1 cup salt and 1 tablespoon pulverized alum, and scald the pickles in this mixture; pour it off, and pour on new vinegar, with spice, red peppers, cinnamon, root ginger and cloves.

Cucumber Pickles No. 2.—Take $\frac{1}{2}$ bushel cucumbers, and soak 24 to 36 hours in brine strong enough to float an egg; then take them out, wash, and cover them with vinegar and water (half and half) adding alum the size of a large walnut; let soak 2 days. Then take out, put in jars, and put 1 green pepper in each large jar. Scald 2 gallons vinegar with 3 lbs. brown sugar, 1 oz. each stick cinnamon, whole cloves, and whole allspice, and pour it over the pickles. They can be used next day, and are fine.

No. 3.—Pick when 2 or 3 inches long, no larger. Wash, dry, and put a layer in the bottom of a glass fruit jar; mix 1 teaspoon each of whole cloves, whole pepper-corns, allspice, and 2 teaspoons of stick cinnamon broken fine; sprinkle the cucumbers in the jar with this mixture, add more cucumbers, then more spice, and so alternately until the jar is full. This amount of spice is for 1 quart can. Fill the can with strong vinegar, cold, screw on the cover, and in about 4 or 5 weeks they will be ready for use. By this method one can pick cucumbers each day, using as many cans as they will fill; it is sure and easy, as there is no trouble salting, boiling, etc.

No. 4.—Take 2 parts soft water, and 1 part New Orleans molasses or sorghum; put it in a jar or cask, and set it in the sun with a thin cloth and board covering it; the board should be removed during the day, but the cloth left on to keep out insects. This must be prepared long enough to get sour (say 4 weeks) before putting in cucumbers. Set it in a cool place as soon as you begin to put in cucumbers; pick and put some in each day, and every time you put in cucumbers add a little molasses to keep up the strength of the vinegar. Lastly add 5 or 6 lbs. of brown sugar, a few horseradish roots and a small piece of alum. Some use the same vinegar every year; strain it, and add molasses as the cucumbers are put in. It saves the trouble of making fresh every year.

Salting Cucumbers.—Wash them, and put first a layer of salt, then a layer of cucumbers, and so on alternately until the jar is full, having salt on top and keeping all down with a weight. They will keep this way 2 or 3 years. For use, freshen them by soaking in water for 2 or 3 days, changing the water daily. Scald vinegar, to which is added spices, and a little sugar if desired, and pour this hot over the cucumbers. A cloth can be laid over salted cucumbers, under the weight, and the scum that arises may be removed by taking off the cloth and rinsing it. Horseradish tops or cabbage leaves placed under the cloth will prevent molding.

Large Cucumber Pickles.—Very nice pickles may be made with the large cucumbers that would be considered unfit for use by some people. Peel them, and take out the seeds and soft part; cut them the long way of the cucumber, cover them with cold vinegar, and let them stand one day and night; drain them well and put on fresh vinegar, with 2 lbs. sugar; put 1 oz. cassia buds in a quart of vinegar and add to the pickles. Boil for 20 minutes, then put them away in jars, well covered.

Spiced Cucumber Pickles.—Soak 2 quarts of salted pickles in cold water until quite fresh—it may take 2 days; be sure and change the water 2 or 3 times a day; when fresh, wipe dry and pack closely in jars. Take 1 quart vinegar, $1\frac{1}{2}$ cups brown sugar, 1 tablespoon cinnamon, and 1 teaspoon cloves tied in a bag; bring to a boil, and turn it over the pickles while hot.

Pickled Gherkins.—Put them in strong brine until they are yellow; then remove them, and pour on hot, spiced vinegar, and keep them in a warm place until they turn green; take them out, and cover with good vinegar, boiling hot and spiced to taste.

Gherkins are young cucumbers, gathered before they are mature, and they are used for nothing but pickling; as pickles, however, they are generally liked. They should not be gathered too young, or their flavor will not be sufficiently developed.

Pickled Eggs.—Boil eggs hard, take off the shells, and put them in jars; take vinegar enough to cover, season it well with cloves, allspice and whole peppers, and a little ginger tied in a muslin bag; bring it to a boil, and pour it hot on the eggs; close the jars tightly when cold. They will be ready for use in a fortnight.

Jersey Pickles.—Take 1 package ripe tomatoes, 3 peppers, 3 tablespoons salt, 1 heaping teaspoon of cloves, 3 heaping teaspoons cinnamon, 4 cups sugar, 2 cups vinegar; boil from $1\frac{1}{2}$ to 2 hours.

Pickled Lemons.—(1) Select 12 small lemons with thick skins; cut into them nearly to the center, but not quite enough so that they fall apart; fill the openings with salt, and pack them in an earthen dish on end; set away, and in about 4 days there will be brine enough to partly cover them; turn them over, repeating each day for 4 days, so that all parts may soak in the brine; then drain them out and put in glass jars. Add enough cider vinegar to cover the fruit, a little crushed ginger root and a Jamaica pepper if desired, or other spice; bring it slowly to a boil, skim, and pour it on the fruit when cold. (2) Another way is to wash 2 doz. lemons, cut across or through the ends of each about 2 inches and pack with the cut end down in a stone jar; add 4 quarts vinegar, $\frac{1}{4}$ lb. mustard-seed, $\frac{3}{4}$ lb. salt, $\frac{1}{2}$ oz. each of cayenne pepper, cloves, and nutmeg and 1 small onion; cover the jar, and set it in a kettle of boiling water and boil all day. They should be tender enough to pierce with a fork easily.

Pickled Limes.—(1) Take 12 limes, make incisions into the rinds into which rub salt, put them on end in an earthen dish, and set in a warm place 4 or 5 days, or until soft, turning them over 1 or 2 times, and put them in glass jars, pouring in the brine. Take enough vinegar to cover them, add $\frac{1}{2}$ oz. whole pepper, and 2 oz. each of bruised ginger and mustard-seed, bring to a boil, and pour on them while hot. When cold, seal the jars. (2) Pick limes when full grown, sound and fresh, and put them at once into brine about as strong as sea-water; in 2 or 3 days it will become bitter; pour it off, cover with fresh brine, and repeat about 3 times, or until the bitterness is extracted. Cover with fresh brine, and they will keep indefinitely and can be shipped, being always saleable barreled thus.

Pickled Martynias.—Choose the small, tender martynias; wash and brush them carefully; soak them in a strong brine for 5 days, then soak them in fresh water until the salty taste is nearly gone; next wipe them dry, put them in a jar, and pour over them well spiced hot vinegar, flavored with onions if liked.

Mango Pickles.—Pick green cantelope melons when half grown (about the size of a pint bowl); cut out 1 lobe, carefully scrape out all the seeds, return the lobe and tie it in place; put 15 of the melons in a brine strong enough to float an egg, and leave 6 weeks, keeping them well under; then take out, soak in fresh water 24 hours, then remove, wipe dry, and fill with the following stuffing: Take $\frac{1}{2}$ lb. scraped horseradish; $\frac{1}{2}$ lb. race ginger, scalded, scraped and chopped fine; 2 nutmegs; $\frac{1}{2}$ oz. mace; 1 oz. whole black peppers; 1 small box good mustard; 1 oz. turmeric; 12 large onions minced very fine. Pound the mace, nutmegs and black pepper together, and mix all the ingredients together with enough salad oil to make it into a paste. Stuff each melon perfectly full; return and tie the

lobe in place with thread, and put each mango when stuffed into a jar large enough to hold them all. Put enough strong cider vinegar to fill the jar into a preserving kettle; crack and add $\frac{1}{2}$ oz. each of cloves, ground ginger, mace and allspice, let boil, and pour hot over the mangoes. Keep the jar closely covered. Made in the fall the pickles will be fit to eat Christmas, but the following Christmas they will be matchless, their perfection increasing with age. This pickle is the most elegant made, and is suitable for any dinner that can be served.

Green Pepper Mangoes.—Take green peppers which are sound and firm and add as many red ones for appearance; cut off the top, extract the seeds, put into a strong brine, and let soak 24 hours; then drain them, wipe, and fill with a stuffing made of ground cloves, mustard seed, green tomatoes chopped, cabbage chopped, and salt, mixed all together; sew on the tops, and cover them with strong, hot vinegar containing 1 cup brown sugar; repeat for 4 mornings, and seal up.

Peach Mangoes.—Take large, fine, freestone peaches; with a silver knife cut a hole in the side just large enough to remove the stone, take it out, put back the piece, tie it in, and put the peaches into a strong brine; leave 36 hours, drain out, and let them lie 20 minutes in cold water; wipe carefully, and fill the inside with grated horseradish to which is added a little celery seed and crushed ginger root, and moistened with vinegar. Replace the piece forming the opening, sew or tie it in place with thread; stand them closely in glass jars, and cover them with boiling hot vinegar, containing 1 cup sugar to each quart of vinegar; tie up when cold. They can be used in 8 days.

Mixed Pickles.—Take 2 heads of cauliflower, 2 heads cabbage, 50 small cucumbers, 8 small carrots, 2 quarts string beans, 12 sticks of celery, 6 red peppers (without the seeds) and 3 green peppers; chop these vegetables separately, and let them soak over night in salt and water; in the morning wash and drain them. Take 2 grated nutmegs, 3 teaspoons each of mace and cinnamon, tie in a muslin bag, and put into vinegar enough to cover the vegetables; scald it, pour it over the vegetables hot, put in jars and cover closely.

Pickled Mushrooms.—Clean carefully, and boil a few minutes in salt and water; drain, and dry them between linen cloths; put into jars, and cover with vinegar, spiced to taste.

Mustard Pickles.—Chop fine, equal quantities of cauliflower, white onions, celery, green peppers and green tomatoes; pour on a scalding hot brine, let stand over night, and drain. Take $\frac{3}{4}$ gallon cider vinegar, 1 cup sugar, and 2 tablespoons of butter; bring to a boil, and add 1 cup flour, 6 tablespoons ground mustard, $\frac{1}{2}$ oz. turmeric powder wet in cold vinegar; pour it all, scalding hot, over the pickles.

Pickled Nasturtiums.—Leave about 1 inch of stem on when they are picked; let them soak in strong brine for 3 days; drain, and soak them in cold water 1 day; drain, put in jars, and pour on boiling vinegar to cover; they need no spices. They can be used in a month, and will serve instead of capers if desired.

Pickled Onions.—(1) Take nice onions, peel them, put into boiling water, and let them stew until quite clear; then remove them quickly, put them between cloths to dry, and then put them in glass jars. Take good vinegar, put in ginger and whole peppers, bring to a boil, and when cold pour over the onions, and tie up closely. (2) Select button onions, cover with scalding hot brine, and leave 36 hours; drain, put in jars, and cover with vinegar, poured on hot, and spiced as desired.

Pickled Oysters.—Take 1 quart oyster liquor, 7 tablespoons good vinegar, 1

teaspoon each of allspice and white pepper, 1 tablespoon of salt and 2 blades of mace; into this put 1 quart of oysters, and simmer 5 minutes; take them out, boil the liquor, skim it, and pour it over the oysters; can them while hot if you wish to keep them some time.

Pickled Parsley.—Prepare a brine and thoroughly wash selected parsley in it; drain, shake dry, put into glass jars, cover with cold vinegar, containing 1 tablespoon of chopped horseradish to the quart, and tie up. It can be used for garnishing.

Pickled Peppers.—Take large green ones, and extract the seeds through a slit cut in the side, but leaving them whole; then put them in a strong brine for 2 days, changing it once; then put them in cold water for 1 day; drain, and pour on, boiling hot, a solution of $\frac{1}{2}$ vinegar and $\frac{1}{2}$ water; when cold, drain them, put into jars, and cover with strong cider vinegar, boiling hot. Tie up when cold. They are sometimes filled, before being put into the jars, with a stuffing made of cabbage head, chopped fine, seasoned with salt and white mustard-seed mixed in well; then sew up, put in jars, and cover with cold spiced vinegar.

Piccalilli.—Slice 1 package of green tomatoes, add 2 cups salt, cover with water and let stand 24 hours, then put into fresh water; squeeze out of this and add 12 green peppers, 6 onions, 1 head of cabbage, chop all very fine, cover with vinegar and scald; then drain off, add 2 cups of molasses, 1 tablespoon cloves, allspice, and 2 oz. white mustard seed, and cover with cold vinegar.

Green Tomato Pickles.—Slice 1 peck of green tomatoes and let stand over night with a little salt sprinkled between them; in the morning put them into weak vinegar and scald; remove the tomatoes and when cold put in jars. Take strong cider vinegar to cover; add 1 cup sugar, 4 green peppers, mustard and spice to taste, bring it to a boil, and pour over the tomatoes.

Ripe Tomato Pickles.—Use the small yellow plum tomatoes; prick them with a coarse needle, pack in jars, and cover with hot cider vinegar, spiced or not as preferred. Cover close and keep in a cool place.

Pickled Turnips.—Wash them, but do not break the skin or the juice will escape; boil them, and when done pare, cut in slices $\frac{1}{2}$ inch thick, and pour on spiced vinegar boiling hot. They are best eaten when new.

Pickled Walnuts or Butternuts.—Gather them when young enough to be pierced readily with a pin; put them in strong brine, and leave them 7 days, changing it every other day; then take them out, wipe dry, and pierce them with a large needle in a number of places; cover them for 8 hours, or over night, with cold water; then drain, and put in jars. Take enough cider vinegar to cover, and to each gallon allow 12 blades mace, 1 cup sugar, 36 black pepper-corns, 36 cloves, and 1 tablespoon allspice; boil 5 minutes and pour hot on the nuts; repeat twice, 3 days apart, and tie up.

Ornamental Pickle.—Take red beets, cook until tender, then peel and cut into dice, put in jars and cover with vinegar spiced to taste. Boil eggs 25 minutes, then drop into cold water; when cold, shell and put in with the pickles.

French Pickles.—Take 1 package green tomatoes, 1 medium-sized cabbage, 6 large onions, 6 large peppers; chop all very fine, but let the tomatoes drain through a colander before adding the rest. Add 1 cup white mustard-seed, 2 lbs. brown sugar, 1 gallon strong vinegar, 2 tablespoons cinnamon, 1 tablespoon each of allspice, cloves and black pepper and $\frac{1}{2}$ cup salt; cook $\frac{1}{2}$ hour and put into a jar.

Russia Pickles.—Take 2 gallons cabbage coarsely chopped, 12 onions, 4 quarts

green tomatoes chopped together, 6 green peppers, 1 oz. pepper berry, 1 oz. celery seed, $\frac{1}{4}$ lb. white mustard-seed, $1\frac{1}{4}$ lbs. sugar, $\frac{1}{2}$ gill salt, 4 quarts vinegar; boil all together until the cabbage and tomatoes are tender; then add $\frac{1}{2}$ oz. turmeric. Can while hot.

Chili Sauce.—Take 18 large tomatoes (not too ripe), 1 green pepper, 3 onions; chop fine and add 2 tablespoons of salt, $\frac{1}{2}$ cup sugar, 2 cups vinegar, 1 teaspoon each of cloves, nutmeg, cinnamon and allspice; boil 2 hours and put in cans.

Chow Chow.—Take 2 large heads of cauliflower, 2 quarts green peppers, 3 quarts green cucumbers, 3 quarts green tomatoes, 2 quarts small onions; slice about $\frac{1}{2}$ inch thick, and sprinkle with salt in alternate layers of tomatoes, onions, and cucumbers; boil the cauliflowers about 5 minutes; let them stand over night, then strain all carefully and free from water. Then place in jars and make a seasoning as follows: Take 1 lb. mustard, $\frac{1}{2}$ lb. mustard-seed, $\frac{1}{2}$ lb. whole allspice, $\frac{1}{2}$ lb. whole black pepper, 2 cups brine, 1 gallon vinegar, 1 tablespoon curry powder; boil strongly 15 minutes, and pour over the vegetables. If too thick, add vinegar. Mix the mustard with vinegar, and tie the spices all together in a muslin bag; they should all boil with the vinegar.

Chow Chow No. 2.—Take equal amounts of green tomatoes and cabbage, $\frac{1}{2}$ the amount of onions, or less if preferred, and 1 or 2 green peppers; chop all together fine; then season with plenty of salt, a red pepper cut fine after removing the seeds, black pepper and a little white mustard-seed. Mix the spices well through the mass, pack in jars or bottles, and pour on cold vinegar. Keep it cool. It will be ready for use in a few days, will keep several weeks, and can be made thus without cooking.

SWEET PICKLES.

These are made from any of the fruits suitable for preserving, and also from some of the vegetables. The strength of the syrup used varies from 1 to 4 lbs. sugar to the quart of vinegar, as vinegar varies in strength and some people like it sweeter than others, but it is better to have the syrup rich. The best sugar to use is the best light brown or coffee "C" sugar; some use maple sugar.

The spices generally used are cinnamon and cloves, although allspice, mace and ginger are sometimes added, and can be used by any who desire them. The spices should be tied in a muslin bag before being boiled in the syrup, or they will discolor such fruits as apples, pears, etc.

Apples, melon rinds, cucumbers and pears should be steamed until tender enough to pierce with a broom straw or fork before pouring the hot syrup over them, as it then penetrates them more readily. Smooth skinned fruits, like plums, etc., should be pricked with a needle before being cooked in the syrup. Peaches if very ripe do not need steaming, but otherwise they do. They are sometimes merely rubbed well with a cloth; some people wash them first with a weak lye, and some cooks peel them.

The method of making sweet pickles is to prepare the syrup, bring it to a boil, put in the pickles, and boil until tender; then put into jars and put away when cold. Another way is to prepare the syrup and pour it boiling hot on the pickles; let stand until next day, drain off the syrup, boil it, pour on hot again, and repeat this for 4 or 5 days; then seal hot. Either plan works well.

A Hint.—Many people do not know that sweet pickles can be made from preserves of almost any kind. All that is needed is to take the syrup, add vinegar and any spices desired, boil it up, and pour it again on the fruit.

Pickled Apples.—Peel and core them, and steam until tender; prepare a syrup of 3 lbs. sugar to 1 quart of vinegar, add spices (tied in a bag) bring to a boil, put in the apples, let simmer quietly 2 minutes, then put in jars and seal.

Crab Apples.—Select good apples, take out the blossom end, steam until a fork

will readily pierce them; prepare a rich syrup of $3\frac{1}{2}$ lbs. sugar to 1 pint vinegar, add spices, and finish like sweet apples.

Pickled Beets.—Boil them until tender, in a porcelain-lined kettle, and when cold slice them crossways, as the appearance is better than if cut lengthways; put in jars and pour on a hot rich syrup of vinegar, sugar, and spices to taste (put the spices in a bag).

Pickled Blackberries.—Prepare a syrup of 2 cups vinegar, 4 lbs. sugar, and $\frac{1}{2}$ oz. each of cinnamon and cloves; bring it to a boil, put in 10 lbs. berries, *simmer* for $\frac{1}{4}$ hour, and put into jars.

Blueberries, Raspberries, and Strawberries can be put up the same way.

Pickled Red Cabbage.—Cut fine 8 heads of red cabbage, pack it in a crock in layers, sprinkling salt between each layer, and let stand over night. Then put 6 lbs. sugar in $\frac{3}{4}$ gallon of vinegar, add 2 oz. each of allspice, pepper, cinnamon and cloves, and 2 tablespoons of celery seeds (tied in a bag); boil it, and pour hot on the cabbage.

Pickled Cantelope.—Select melons which are neither soft, yellow, nor yet very green; pare, remove the seeds and soft inside, slice, and stick a clove with the blossom end taken off into each piece. Prepare a syrup of $3\frac{1}{2}$ lbs. sugar to 2 quarts vinegar, and when it boils put in the melons and simmer until they are soft and transparent; then put into glass jars and pour on the syrup hot; leave until the next day and they will have settled a little, when fill again with the cold syrup left over, and cover closely.

Pickled Cauliflower.—Cut the cauliflower into any shaped pieces desired, put them into strong brine, and leave 24 hours; then take out, boil the brine, and pour it on the pickles scalding hot; let stand until next day, and drain them out. Prepare a spiced vinegar, boiling any spices desired in it; let it get cold, and pour it cold on the pickles.

Pickled Cherries.—Stone and put into a jar 5 lbs. good ripe cherries, adding a few pits to flavor; take $\frac{1}{2}$ oz. each of mace, cloves and cinnamon, 2 lbs. sugar, and 2 pints good cider vinegar; put all together, bring to a boil, and pour over the fruit hot.

Currants.—Put 6 heaping cups of sugar into 1 quart vinegar; add 7 lbs. currants, scald them, take them out and put in jars; boil the syrup a few minutes, and pour it hot over the fruit. Use only $\frac{1}{2}$ as much vinegar if they are desired sweeter.

Cucumber Pickles.—Take ripe cucumbers, quarter them, remove the seeds, and soak in strong brine (keeping them well under) for 10 days; take out, soak 1 day in clear cold water, and then over night in weak alum water, and drain them out; take 1 quart of vinegar, 6 cups sugar, 2 tablespoons each of cloves, mace and cinnamon (tied in a bag), bring to a boil, put in the cucumbers, and simmer until tender.

Pickled Grapes.—Take fresh, sound, ripe grapes, and pack them in jars; prepare sweetened and spiced vinegar, let it get cold, and pour over the grapes, covering them fully.

Pickled Figs.—Make a hot pickle of sweetened cider vinegar; take ripe figs, peel them, put them in the pickle, and boil gently until tender.

Pickled Plums.—Gather the plums with the stalks, prick them with a needle, and put them with layers of cloves and cinnamon into glass jars. For every 4 lbs. plums boil up 2 lbs. sugar and 1 quart of vinegar, and pour it hot over the plums. Next day pour off the vinegar, boil it up again, and pour it over the fruit again; repeat this twice, then tie up. It improves by keeping.

Pickled Peaches.—Wipe the peaches and steam them until tender, and then pack them in jars; take 1 quart of sugar and 1 tablespoon of cloves and broken stick cinnamon (tied in a bag) to each quart of vinegar; boil it and pour hot over the fruit; the next day turn it off, boil again, and pour hot on the peaches again; repeat once, seal up and put away.

Pears and Quinces can be put up the same way, but the latter can be pared, cored and quartered before steaming, and the parings and cores used for making jelly.

Pickled Pineapple.—This can be pared, sliced, and boiled gently until tender; then put in jars and finished like peaches.

Pickled Raisins.—Prepare a syrup of 1 cup sugar to 1 pint vinegar; put in 2 lbs. raisins, leaving the stems on, and cook gently 30 minutes; then put them into jars.

Green Tomato Pickles.—Slice 1 peck green tomatoes and 6 large onions (or 1 quart of small ones); sprinkle on 1 cup salt, and let stand over night; in the morning drain; then boil them 5 minutes in 2 pints vinegar and 4 pints water, and again drain through a colander. Then take 1 gallon vinegar, and 2 lbs. sugar, 2 oz. white mustard-seed, 2 tablespoons each of cinnamon, ginger and cloves, and 6 green peppers, chopped, or $\frac{1}{2}$ teaspoon cayenne pepper instead; boil all gently 15 minutes, and pour over the chopped tomatoes and onions. They will keep a year or more. If desired, the onions can be omitted, and the tomatoes put up alone in the same way.

No. 2.—Take 1 peck sliced green tomatoes, and let them stand in strong brine all night; then drain, boil until tender, drain again and put in jars. Prepare a syrup of 3 lbs. sugar, $\frac{1}{2}$ oz. allspice, and 1 oz. each cinnamon and cloves to 1 quart vinegar; boil, and pour hot over the tomatoes.

Husk Tomato Pickles.—For 7 lbs. husk tomatoes use 4 lbs. sugar, 2 cups vinegar, 2 teaspoons each of cloves, cinnamon and mace; prick the tomatoes instead of peeling, put them in a porcelain kettle with the sugar in alternate layers, heat slowly to boiling, add the vinegar and spices, and boil 5 minutes; take the fruit out with a perforated skimmer, and spread it on dishes to cool; when cool, pack it in glass jars, boil the syrup thick, and pour it boiling hot on the fruit. Examine them occasionally the first month, and if any signs of fermenting appear, set the jars uncovered in a kettle of water (with thick cloth under them) and heat until the contents are scalded. These are very nice.

Watermelon Rind.—Soak it in vinegar over night; then boil it in water until tender, and drain. Prepare a syrup of 3 lbs. sugar and 1 oz. each cinnamon and cloves (tied in a bag) to 1 quart vinegar, or to 1 pint vinegar if wanted very sweet; bring it to a boil, put in the rind, boil 5 minutes and put in jars.

Citron can be put up in the same way.

SPICED FRUIT.

Some people confound spiced fruit and sweet pickles, but they are not the same. Sweet pickles are really a pickle, but spiced fruit is a spiced preserve, usually boiled down thick.

Spiced Fruit.—Sprinkle $1\frac{1}{2}$ lbs. sugar over $3\frac{1}{2}$ lbs. fruit and let it stand over night; then take the juice, add 1 cup vinegar, and cinnamon, mace and cloves to taste, and boil 15 minutes, then put the fruit in and boil 10 minutes and put in jars.

Spiced Apples.—Take 2 cups vinegar, 2 lbs. of sugar, $\frac{1}{2}$ oz. cinnamon and $\frac{1}{4}$ oz. of cloves; boil all together, and while boiling add 4 lbs. of apples which are pared, quartered and cored; let them boil about 20 minutes, or until tender; then take them out and put in a jar; boil the syrup down until thick and pour it over the apples.

Spiced Blackberries.—Take 1 cup of vinegar, 2 cups of sugar, and 1 tablespoon each of allspice, cloves and cinnamon; add $2\frac{1}{2}$ lbs. blackberries, bring to a boil, skim out the blackberries, and boil the balance for 1 hour; put back the berries and boil 15 minutes; then put in jars and tightly cover.

Spiced Cherries.—Boil together 2 pints vinegar, 2 lbs. sugar, and, tied in a bag, $\frac{1}{2}$ oz. each of cinnamon, cloves and mace; then put in 5 lbs. tart cherries, having the stems left on, and boil 20 minutes.

Spiced Currants.—Take 4 lbs. sugar, 2 cups of vinegar, 4 teaspoons each of allspice, cinnamon and cloves (tied in a bag); add 5 lbs. currants and boil 2 to 3 hours.

Spiced Elderberries.—Take 2 cups vinegar, 4 lbs. sugar, 1 teaspoon each of allspice and cloves and 1 tablespoon of cinnamon (all tied in a bag), and boil; then add 6 lbs. elderberries, boil 2 hours, and put in jars.

Spiced Gooseberries.—Take 5 lbs. gooseberries, 4 lbs. sugar, 2 cups vinegar, 1 tablespoon cloves and cinnamon; boil 3 hours, then put in jars.

Spiced Grapes.—Pulp 7 lbs. grapes and scald until the pulps will pass through a sieve; then put them in the preserving kettle, add 5 lbs. sugar, 1 quart vinegar, and ground cinnamon, cloves and allspice to taste; let boil, add the skins, and boil 1 hour, or longer if they are wanted very thick.

Spiced Pears.—Take 2 cups vinegar and 6 cups of sugar, and put cinnamon, cloves and mace in a bag and boil all till nearly thick enough; then put in pears which have been nicely pared, and 3 or 4 cloves (without the heads) stuck in each one, and boil until they look clear; now put the pears in a jar, pour the syrup over, cover tightly, and they will keep indefinitely.

Spiced Peaches.—Wipe $2\frac{1}{2}$ lbs. peaches and boil them until tender in 2 cups vinegar and 1 lb. brown sugar; then take them out and put in $\frac{1}{2}$ oz. each of cinnamon, mace and cloves, boil them all well, and pour over the peaches.

Spiced Tomatoes.—To each pound of ripe tomatoes (peeled) allow $\frac{1}{2}$ cup vinegar, $\frac{1}{2}$ lb. sugar, and spices to taste; boil all together gently until the tomatoes are cooked; take out the tomatoes and put them on a dish till cold, but let the syrup simmer; put back the tomatoes when cold, and cook till they are a dark red; then take them out and boil the syrup down thick. When cold, put in jars and seal.

CATSUPS AND SOYS.

In making catsups use good sound fruit. See what we say about "The Utensils Used" in the introduction to our article on "Jams, Jellies, etc.," as that will apply also for catsups. Do not put these up in tin cans, but use glass or stone jars. If mold is found on top when the catsup is opened, it can all be removed, and the contents will not be seriously injured; but if mold is scattered in spots *throughout the mass*, it is worthless. If when a can is opened there is danger that the balance of the contents will spoil, it should be thoroughly heated. Vinegar can then be added if too thick.

Catsups, like preserves, should be kept in a dark, dry, cool place. A few whole cloves laid on top will prevent mold from forming.

Apple Catsup.—Take 12 tart sound apples, pare and quarter them, and cook in very little water until soft; then pulp through a sieve; for each quart of this pulp take 2 cups vinegar, 2 medium-sized onions chopped fine, 1 cup of sugar, 2 teaspoons of cinnamon, 1 teaspoon each of mustard, cloves and pepper, 1 tablespoon salt; mix all together with the pulp, and boil 1 hour; put into jars hot, and seal tight.

Crab Apple Catsup.—Take $\frac{1}{2}$ peck of chopped crab apples, (do not remove the skins) 3 cups of sugar, 1 pint of vinegar, 1 even tablespoon salt, 1 teaspoon each of ground cinnamon, pepper, and cloves. Cook slowly until soft; then put in jars.

Cherry Catsup.—Take the pits from 2 quarts of nice large cherries; put 2 cups of vinegar with 2 cups of sugar, a dozen whole cloves, and 2 or 3 sticks of cinnamon, broken coarsely, in the preserving kettle, and boil the cherries 10 minutes. Set away in the kettle until next day; boil again 5 minutes and pack hot in wide-mouthed bottles; cork tightly. A few whole cloves under the corks will prevent mold in the tops of the bottles.

Cucumber Catsup.—Grate the cucumbers, drain them in a colander, and for each quart allow 2 cups vinegar, 4 tablespoons grated horseradish, 2 teaspoons salt, and $\frac{1}{2}$ teaspoon cayenne pepper. Bottle without cooking and seal. Some cooks cover it with vinegar alone. Others add 1 large onion, chopped very fine.

Currant Catsup.—Take 6 quarts of currant juice, 2 lbs. sugar, 1 teaspoon cloves, 1 tablespoon each of cinnamon, allspice and salt. Boil half down; then add 1 cup vinegar. Cork tightly.

Elderberry Catsup.—Pick 2 pints elderberries from the stalk, put in a jar, and pour over them 2 pints scalding hot vinegar; cover with window glass and set in the sun 2 days; then drain off the liquor and add 2 tablespoons white sugar, 1 tablespoon small peppers, 6 anchovies soaked and picked to pieces, 1 teaspoon salt, $\frac{1}{2}$ teaspoon cloves, boil 1 hour, stirring frequently, and keeping covered when not stirring; then take from the stove, let it cool, then strain, bottle, and seal.

Grape Catsup.—Take 6 lbs. grapes, boil in a little water and strain; add 3 lbs. sugar, 2 cups vinegar, 1 tablespoon each of cloves, cinnamon, extract of lemon and salt; boil until thick and bottle.

Gooseberry Catsup.—To 8 quarts of gooseberries add 4 lbs. brown sugar, 2 cups vinegar, 2 oz. cinnamon, 1 oz. cloves. Boil 4 hours slowly, and stir frequently.

Lemon Catsup.—Mix together 4 tablespoons of white mustard-seed, 2 tablespoons each of grated horseradish and sugar, 1 tablespoon each of white pepper and turmeric, 1 tablespoon each of mace and cloves, 1 saltspoon of cayenne pepper, 1 shallot minced fine; have the spices all ground fine, and sprinkle on 2 tablespoons salt. Add the grated rind and juice of 12 lemons, cover, and put for 3 hours in a cool place; then boil $\frac{1}{2}$ hour, strain through flannel, bottle and seal.

Mushroom Catsup.—Put the mushrooms in layers, with salt sprinkled on each layer, and let stand 4 days; then mash them fine, and to each quart add $\frac{3}{4}$ of a teaspoon of black pepper, and boil it 2 hours in a crock set in boiling water; strain it from the liquor without squeezing; boil the liquor, and let it stand to cool and settle; then bottle and seal securely.

Oyster Catsup.—Chop 1 quart of oysters, put them in a porcelain kettle with their liquor and 1 cup vinegar; bring to a boil, skim off the scum as it rises, and boil 3 or 4 minutes; strain through coarse flannel or a hair sieve, return the liquor to the fire and add 1 tablespoon salt, and 1 teaspoon each of mace and cayenne pepper; boil 20 minutes, and bottle when cold, sealing it well.

Pepper Catsup.—Take 50 pods of large, red bell peppers, seeds and all; add 1 pint of vinegar, and boil until you can pull it through a sieve; then add to the pulp 1 pint vinegar, 2 tablespoons each of sugar, cloves, mace, allspice, salt and onions, and boil all to the proper consistency. Some cooks omit the spices.

Tomato Catsup.—Tomatoes for catsups are best gathered in August, as they become acid and watery later on. Select good tomatoes, scald and strain through a sieve; to each 2 quarts of the sifted tomatoes, allow $2\frac{1}{2}$ tablespoons each of black pepper, salt and ground mustard, 1 tablespoon of cloves, and 2 cups vinegar; boil 3 hours and bottle for use.

Tomato Catsup No. 2.—Take 1 bushel of tomatoes, 2 oz. salt, $1\frac{1}{2}$ oz. ground black pepper, 1 oz. ground cinnamon, $\frac{1}{2}$ oz. ground cloves, 3 tablespoons ground mustard. Skin and slice the tomatoes, stew them until soft, rub through a sieve, and boil the pulp slowly until it is about the consistency of apple butter; then add 1 quart of vinegar to which has been added 1 cup of sugar and the above spices; boil up twice, bottle and seal.

Walnut Catsup.—Gather the nuts while they are young and tender enough to pierce with a pin easily; mash them to a soft pulp, and let them lie in salt water 2 weeks; drain them, cover with boiling vinegar, mix and mash them in it, and strain through a colander; to each quart of the juice add 3 tablespoons each of pepper and grated nutmeg, 2 tablespoons of powdered cloves, 1 tablespoon of ginger; boil 1 hour, and bottle when cold.

Currant Soy.—Take $\frac{1}{2}$ gallon of currants and add 2 cups vinegar, 1 cup sugar (heaped), 1 tablespoon mace, the same of allspice, 1 teaspoon each of cinnamon and pepper; boil all together 1 hour, bottle and seal.

Soy.—The genuine soy is made in Japan and China from the seeds of a plant called *Dolichos Soja*; the seeds are similar to our kidney bean, but are black. The soy is made by boiling the seeds until soft, adding wheat or barley, allowing it to ferment, and then adding an equal amount of salt. It becomes clearer with age. There are many stories of its adulteration, some of them unfortunately being too true. It is much liked with fish. The term has now come, however, to be applied to a kind of catsup.

Gooseberry Soy.—Take 2 cups vinegar, 3 lbs. sugar, and 6 lbs. gooseberries; boil 30 minutes.

Grape Soy.—Take 5 lbs. grapes and let them simmer gently until soft; strain through a sieve and add 2 tablespoons each of allspice and cinnamon, $\frac{1}{2}$ tablespoon each of cloves, grated nutmeg, and salt, 3 cups of sugar (heaped), and 2 cups vinegar; mix all thoroughly, boil until thick, bottle and seal.

Plum Soy.—Take 1 gallon of plums, boil gently until tender, rub through a sieve, and add 2 tablespoons of sugar, the same of salt, 1 tablespoon each of cloves, ground mustard and black pepper, and 2 cups vinegar; boil gently 1 hour, bottle and seal.

Green Tomato Soy.—Take 4 quarts of green tomatoes, sliced but not peeled, 12 onions peeled and sliced; add 4 cups sugar, 1 tablespoon each of cloves and allspice, 2 tablespoons each of black pepper, ground mustard and salt, and $\frac{1}{2}$ gallon of good vinegar; boil gently, stirring frequently, until tender; bottle and seal.

Ripe Tomato Soy.—Peel and slice 4 quarts of ripe tomatoes, slice and add 7 onions, sprinkle on 1 cup salt, and let stand 36 hours, when drain off the liquor; then add 1 teaspoon red pepper, 2 teaspoons each of allspice, cloves, ginger and ground mustard, and $\frac{1}{2}$ gallon of good vinegar; let it simmer quietly 2 hours and add $\frac{1}{4}$ lb. white mustard-seed and 4 cups sugar; cook till done, then bottle and seal.

VINEGAR.

Vinegar (from the French *vin aigre* meaning literally sour wine) is a form of acetic acid, and its flavor varies according to the source from which it is obtained. Vinegar of the best quality is obtained from the grape, white wine vinegar being usually considered the best. Cider vinegar is derived from cider, and in the United States most of the vinegar was formerly obtained from this source. Its flavor is peculiar, and many prefer it. Vinegar is also made from barley, sour ale or beer, glucose, etc. Vinegar containing 5% of the pure acetic acid is called *proof vinegar*, and is the strongest that is used, but much of that sold in the market contains only 3% of the acid or even less. It is frequently adulterated with other acids like sulphuric, muriatic, etc. Many flavored vinegars used for culinary purposes are merely ordinary vinegar flavored with fruits, herbs or vegetables. We give elsewhere recipes for making a great variety of these.

All the vegetable juices can go through the acetous fermentation and produce vinegar. The process can be hastened by introducing a little ferment, like yeast. The fermentation takes place most readily at 70° to 90° F., but below 60° or above 90° the action begins to diminish; boiling and freezing both stop it altogether.

Vinegar can be made from any pure fruit jelly which has begun fermenting, or which will not "set." All that is needed is to add water and set it in a warm place, or exposed to the sun is best, covered with mosquito netting. Adding a little "mother," or yeast, will hasten it. Vinegar can also be made from cider or any pure fruit wine in the same way, but add a little sugar.

Vinegar and yeast are best kept in glass vessels; glazed ware is not suitable, as their acids attack the glazing, extract its lead, and produce the poisonous acetate of lead. See what we say about "The Utensils Used" in our preceding chapter on "Jams, Jellies," etc. It will apply for vinegar, also.

Mother of vinegar is a fungus, or low form of plant life (the *Mycodermi aceti*). A little of this put into a sweet or alcoholic solution will soon convert it into acetic acid or vinegar. The plant may be divided and propagated to any extent.

Vinegar can hardly be said to have any nutritive value, its office being to stimulate the nerves of taste, and to flavor various foods. It also has a powerful preservative action, preventing the decomposition of vegetable and animal substances.

Apple Vinegar.—When cooking apples, save the parings and cores (if sound); they can be thrown into a jar from time to time, as they accumulate; add enough soft water to cover, and 1 cup of sugar or molasses to each 6 or 8 quarts of water; keep out insects by covering with netting; keep it in a warm place and it will form good vinegar.

Beet Vinegar.—A good vinegar can be made from beets by extracting the juice, and letting it stand in a warm place, or exposed to the sun, covered with netting; a little yeast will hasten the process.

Cherry Vinegar.—Into 1 quart of good cider put 4 lbs. cherries, mashed, and add their stones, also; let stand 24 hours, and add 4 lbs. more cherries without their stones; let stand 3 days and strain (but do not squeeze) through a thin bag; add 1 quart of sugar to each quart of juice, and boil gently 30 minutes; skim, and bottle when cold.

Cider Vinegar.—To each 2 quarts of cider add 1 cup molasses and $\frac{1}{2}$ cup yeast; keep covered where the temperature is 70° to 90° and it will soon make vinegar; then draw it off from the dregs, and keep in a jug, or bottles, tightly corked. Cider for vinegar should be made from good sound apples which are not wormy or decayed.

Clover Vinegar.—Put into a jar 1 quart of molasses, and pour on $2\frac{1}{4}$ gallons of pure soft water, boiling hot; as soon as it is barely lukewarm, add 2 cups hop yeast and 5 pints clover blossoms; cover and let stand a fortnight; then strain through cloth.

Corn Vinegar.—Put into a jar 2 cups of corn cut from the cob, add 2 cups of molasses or brown sugar, and 4 quarts of pure soft water; set it in the sun cov-

ered with netting to keep out the insects; in 3 weeks it will make good vinegar, which is preferred by many people to cider vinegar.

Currant Vinegar.—To 1 gallon of pure soft water add 3 cups brown sugar and 5 cups strained currant juice; keep in a warm place (from 70° to 90°) and it will form vinegar. Or, mash the currants, let stand over night, strain, and let the juice stand in a warm place until fermentation ceases. White currants will make a delicate, pale vinegar.

Gooseberry Vinegar.—Take ripe gooseberries, mash them, and to each quart add $1\frac{1}{2}$ quarts soft water, milk warm; let it stand 24 hours, strain it, and add 1 lb. coarse brown sugar to each quart; let it stand in a warm place in the kitchen, and in 2 or 3 months it will make fine vinegar. It will be superior to much that is sold as white wine vinegar.

Honey Vinegar.—Mix thoroughly into 1 gallon of warm soft water, 2 cups of clear honey; cover and let it ferment, when it will make good vinegar.

Molasses Vinegar.—To each gallon of warm soft water add 1 pint molasses and $\frac{1}{2}$ cup yeast; keep warm and in 3 weeks it will make vinegar.

Potato Vinegar.—Take the water in which potatoes have been boiled, and to a gallon add $\frac{1}{2}$ cup hop yeast and 2 cups sugar; cover with netting, let stand exposed to the sun or in a warm place, and in about a month it will make good vinegar.

Raspberry Vinegar.—Put raspberries in a stone jar and add enough vinegar to cover them; let stand 6 days covered over, but stirring occasionally; then strain through flannel; add sugar pint for pint, boil $\frac{1}{4}$ hour, skim, and bottle when cold.

Rhubarb Vinegar.—Crush the rhubarb, cover with lukewarm water, and let stand 36 hours; then strain, add $1\frac{1}{4}$ lbs. raw sugar or molasses to the gallon of juice, and also add a little yeast; keep it covered and in a warm place for 4 weeks; then strain; put in a keg and leave it to ripen.

Sorghum Vinegar.—Use about 4 gallons of water to 1 gallon of sorghum; keep it in a warm place, or in the sun covered with netting, and it will turn to vinegar. Adding a little yeast will hasten the process.

Tomato vinegar can be made of it by adding 1 gallon of ripe tomatoes at the same time that the sorghum is added.

Sugar Vinegar.—To 1 gallon of water add $1\frac{1}{4}$ lbs. raw sugar, and $\frac{1}{4}$ pint yeast; keep it at about 80°; in 4 days it can be drawn off, when add 1 oz. each of cream of tartar and chopped raisins; in a few weeks it will be ready to bottle.

Yeast Vinegar.—Put into an open keg or jar 2 quarts of hop yeast sponge (set and allowed to get light as for bread); add 5 lbs. sugar or molasses, 5 gallons of soft water, and 2 quarts of corn which has been boiled until tender (adding it when cold); keep it covered and in 3 weeks it will make fine vinegar.

Aromatic Vinegar.—Take 15 grains of oil of cloves; 10 grains oil of cinnamon; 5 grains of oil of lavender; 1 oz. of camphor, $\frac{1}{2}$ pint glacial acetic acid; mix and bottle. Aromatic vinegar is a nasal stimulant useful for reviving and refreshing those who suffer from faintness and nervous headaches.

Spiced Vinegar.—Mix and tie in small muslin bags, 1 oz. each of allspice, celery seed, cloves, turmeric, mace, pepper, ground mustard and white ginger cut small; add 3 cups sugar and $1\frac{1}{2}$ gallons vinegar; keep closely covered and use as needed.

BEVERAGES.

When it is remembered that about 87% of the body consists of water, which is constantly evaporating and passing away, and which must be regularly renewed, the necessity and importance of beverages will be readily seen. Water is the most natural drink for man, and however it may be flavored or disguised it is the chief ingredient in all his beverages. Not less than $3\frac{1}{2}$ pints a day are needed by an ordinary person, and those who are very large or active may need 4 or 5 pints daily. Although water is found in all the food we take, a large proportion of the needed amount must be taken in the form of beverages. Although in hot weather cold drinks are very refreshing, and within proper limits are not objectionable, at other times they often chill the digestive organs and depress the nerve centers, so that there is reason as well as pleasure in the use of hot drinks.

TEA.

Of all the beverages devised by man tea is probably the most extensively used.

To Make Tea.—Allow 1 teaspoon of tea for each cup water, and an extra one for the pot. This is the old rule, but it varies somewhat with the quality of the tea, less being required of the finer grades than of the cheap teas, and as the finer grades go farther they are not so much more expensive in the end. If much is made at once the proportion can be reduced a little. Pour boiling water into the teapot, let it stand until the pot is heated through; then pour out the water, put in the tea, and pour on the water *boiling* hot, cover closely, and set it for 3 to 5 minutes where it will keep *hot* but without *boiling*. English breakfast tea may stand 3 and black tea 5 minutes; then pour into the cups.

Iced Tea (Russian Recipe).—Tea for icing should be made rather stronger than when intended for drinking hot, letting the boiling water stand on the tea for 7 minutes; then pour the tea from the leaves, sweeten to taste, and stand it in a refrigerator for 5 or 6 hours. Serve it in a bowl with lumps of ice and slices of lemon floating in it. Have a pitcher of ice water at hand to weaken it for those who think it too strong. In serving it each person should receive a lump of ice and a slice of lemon.

Iced Tea No. 2.—For each tumbler of water allow 1 teaspoon of the best tea; put the tea, water and lumps of ice into an earthen vessel and stand in the refrigerator 5 or 6 hours. Easier than the former method.

THE PRINCIPLES INVOLVED.—Experiments have shown that five-sixths of the valuable qualities are extracted from tea by boiling water in 3 minutes, and in 10 minutes the leaves are nearly exhausted. If the leaves are steeped a second time, or if they remain too long in the hot water, the aroma is wasted, the tannin is extracted which makes the tea bitter, and it then disorders the digestion. Much of the evil wrought by tea is caused by this too long infusion, which extracts a large part of its tannin. The object to aim at is to extract as much as possible of the theine and volatile oil, and as little as possible of the tannin. When the infusion is once complete, adding fresh tea adds very little to the strength; if more tea is wanted, empty out the old leaves, scald the pot, and make fresh tea as before. The following are the 4 essentials for good tea: (1) Use good tea, and the right amount of it. (2) Have the water *boiling* hot (not lukewarm) when poured on. (3) Have the teapot hot before the tea and water are put in. (4) Do not let it steep too long. *Stewed* tea is no good.

If tea is required quickly, put it into the teapot and stand it in the oven while the water is coming to the boil; as soon as that is *boiling* hot pour it on the tea, and in a minute it can be served.

The Teapot.—A china teapot is the best to use. Do not use tin, because a poisonous compound is produced by the action on the metal of the tannic acid of the tea. The teapot should be clean and dry before using.

The Water Used.—In making tea the water used is an important consideration. Soft water is better than hard, but if it is too soft it is apt to extract too much

of the general properties of the tea and sacrifice its delicacy of flavor, and if too hard it does not extract the theine and volatile oil readily enough. Do not use water which has been twice boiled, or which has boiled long before being used, because boiling expels the air and gases and makes the water flat and tasteless. This is really an important item—far more important than many people imagine. The more rapidly the water is heated the better the tea. When the water is poured on the tea it should be *boiling* hot, and not either cold or lukewarm, and it should be poured on as soon as it boils. If poured on cold and brought to a boil it will extract the tannic acid, injuring both the flavor and the value of the tea. Carbonate of soda has been sometimes used in making tea; it may soften very hard water, but it will spoil the flavor and effect of the tea.

Hints.—With some persons the sleeplessness and headache caused by drinking tea is prevented by putting in a slice of lemon instead of the milk.

Weak green tea with a little sugar and lemon juice in it, but no milk, is a very refreshing drink in cases of fever, taken either hot or cold.

The tea plant (*Thea sinensis*) is native to China, Japan and Northern India. The use of the dried leaves is said to have been introduced into China from Corea in the 4th century, and from thence to Japan, and to have been brought to Europe by the Dutch East India Company in the 17th century. The leaves of the tea plant can only be gathered at certain seasons. The first picking is in April. It yields the finest tea, but little of it is shipped abroad, as a sea voyage injures its delicate flavor. This tea is largely used by the wealthy Chinese, and some of it is carried overland to Russia. The next picking is in May, and a third, later in the season, furnishes the inferior teas which are bitterer and more woody than that gathered earlier. Tea leaves are dried in pans which are heated over smokeless fires. Green teas are dried quickly to preserve their color, while black teas are exposed to the air for a time and undergo a sort of fermentation which darkens them. In tea producing countries the decoction is drunk alone without flavoring; in other countries something is added. The Germans often flavor it with rum, cinnamon or vanilla. The Russians squeeze in lemon juice, while some savage tribes in Tartary boil the leaves with soda, season them with butter and salt, and eat them.

Tea contains an alkaloid called *theine*, which is similar to the *caffeine* in coffee, and *theobromine* in cocoa. Besides this it contains a volatile oil, some tannic acid, and some ordinary food substances. Its volatile or essential oil is developed during drying and roasting, and ought not to escape, as upon this its market value depends more than on anything else. The volatile oil, as well as the theine and tannin, is more abundant in green than in black tea. As ordinarily made, 3 times as much theine is obtained from tea as from coffee. The nutritive element in tea is very small, it being a stimulant rather than a food, but, "it aids the assimilation and transformation of other foods, increases cheerfulness and activity, clears and quickens the brain, and lessens the desire to sleep." It warms the body when cold, cools it when hot by promoting the perspiration of the skin, and has an astringent action on the bowels. Tea contains from 2 to 4% of theine, about 1% of essential oil, 14% of tannin, and 20% of nitrogenous matter insoluble in water. Taken to excess it acts like a vegetable poison, and with young people it is liable to interfere with the proper development of the nervous system.

COFFEE.

It is safe to say that a large percentage of the people who use coffee never drank a really first class cup of it, and a large proportion of the stuff served as coffee is unworthy of the name. And yet good coffee is not difficult to make if it is handled intelligently.

The water used should be *fresh* and *clear*. Long boiling of the water expels the air and gases, and makes it flat and insipid. It should therefore be used as soon as it boils, and this is a much more important item than many people imagine. Do not reboil the water, nor let it boil long before being used, or the best results cannot be obtained.

The roasting of the coffee is also an important matter. It is best roasted and ground just before it is used. If more is roasted than is needed for immediate use it should be kept in an air-tight glass jar or canister; if exposed to the air it deteriorates. Unpleasant odors and moisture are readily absorbed by it, so keep it in a dry and clean place. To roast coffee, put the desired quantity into a perfectly clean, broad dripping pan; have a moderate heat at first, shake and stir frequently; after 20 or 30 minutes increase the heat and stir frequently until it is an even chestnut or "coffee color." If any berries are burned they must be picked out and thrown away, or they will spoil the coffee. Remember that the peculiar and delightful aroma of coffee is due to the changes in one or more oils produced by this roasting; in raw berries it is lacking. When properly roasted these elements constitute about 13% of the berry. If not heated sufficiently the aroma is not properly developed; if heated too much the flavor is again dissipated.

When the berries are properly browned, lift the pan from the stove to the

table and stir in 1 tablespoon of butter and the beaten white of 2 eggs to each pound of coffee, stirring it quickly and well that each berry may be glazed. This helps to develop the aroma, and also to confine it in the berry until let out by grinding. All the coffee which is not used at once should be put into a sieve, when cold, and shaken to break apart any berries which stick together; then put it into an air-tight canister.

If coffee is bought at the store roasted but not ground, each time any is used put into the frying pan what you want for that meal, but no more; heat it over a quick fire until the aroma is perceptible, shaking it constantly and adding barely enough butter to gloss but not make it greasy; then grind it at once and use it. If it was ground at home and buttered, reheat it and use the same way, but without buttering it. This freshens it and develops its aroma. Remember that the coffee should always go *hot* from the frying pan to the coffee mill, and from the mill to the coffee pot, if you want the best results. If ground coffee is used, that can also be heated until the aroma is perceptible, before adding the water.

Grinding the Coffee.—Be sure your coffee is ground right. Most grocers grind the coffee too coarse, so that much more coffee is used than necessary, because in coarse coffee the flavor is not readily extracted. If you grind it yourself make it about like coarse cornmeal—not coarser than that. If your grocer grinds it, make him grind it the same way. He may not like to, but it is the best and most economical way, and *insist* on it. If it is too fine (say as fine as flour), on the other hand, it will clog the strainer. It is too coarse if it is like rice or coarse oatmeal.

Over-boiling.—The tannic acid in coffee should not be extracted or it will make the coffee bitter, and it will also disorder the stomach more; 5 minutes is the limit to which coffee should be boiled to avoid this, while 3 minutes is better. It is an erroneous idea that the longer coffee boils the stronger and better it is. After the caffeine and aroma are extracted, further boiling is a detriment. Cover the spout also when boiling coffee in a coffee pot, that the aroma may not escape through it. The one great object in making coffee is to *extract* and *retain* the caffeine and aromatic essential oils, *without* extracting the *tannin*, and any method which does this is a good method.

The Cream and Sugar.—The milk served with coffee should be scalding hot, but should not be boiled. A pitcher of milk can be set in a pan of hot water and brought nearly to the boiling point day after day, without injuring the china. Some persons find the taste of boiled milk objectionable. Serve cream also if you can; 1 tablespoon of cream and 2 of hot milk is about right. If the coffee is very strong, fill the cup $\frac{1}{3}$ to $\frac{1}{2}$ full of coffee, and fill it up with hot milk; this is much better than diluting the coffee with water. Never fill a cup quite full—it must not run over. Allow each guest to add the sugar to his taste, unless it is one of the family whose taste you know. A very pretty effect is produced by placing on the surface of each cup a teaspoon of whipped cream.

Settling the Coffee.—Isinglass, fish skins, eggs and cold water are used to clear or settle coffee. Egg shells can be washed and saved for this purpose, 2 or 3 of them being enough to clear a quart of coffee; they answer about as well as the egg itself, and are less expensive.

The Coffee Pot.—As good coffee as was ever tasted can be made with a common coffee pot, but some prefer a French biggin or some other device. Those who like these improvements and find them a help can use them, but do not imagine that they are really *necessary* in order to make *good* coffee, for they are not. But whatever coffee pot is used must be absolutely clean—not even milk pans require more scrupulous cleanliness. Every time the coffee pot is used it should be thoroughly cleaned, spout and all. If neglected, or if the coffee is allowed to stand long in the pot, a sort of black, greasy deposit will form on the inside, and it will spoil all coffee made in the pot while it is there. So wash, scald and dry the pot each time after being used. Dry each piece of a French coffee pot separately. Scald it out with *hot* water—cold water sets the greasy film, and is worse than useless. Do not use any soap or soapy water, but *fresh, hot* water merely. If the pot has been neglected, and is coated, put in a tablespoon of washing soda, fill it with water, and boil it for a long time; then scrub it out well, rinse it with hot water, and dry it. Boil the strainers and all parts in the soda water, and scrub them also. Do not heat the coffee pot too hot in drying it, or the next coffee made in it will taste burnt.

Essentials of Making Coffee.—The essentials of making good coffee are the following: (1) Have good coffee, and use the right quantity of it. (2) Have it hot so that there is a perceptible smell of the aroma before it goes to the coffee pot. (3) Cook it just long enough to extract all the caffeine and aroma, without getting the tannic acid. (4) Serve it hot at once, and with hot milk. (5) Be sure the coffee pot is clean and in good condition.

There are many ways of making coffee. It may be boiled or unboiled, made in a plain coffee pot or a French biggin or "grecque" and so on. While the object aimed at is the same in all cases the *modus operandi* must vary with the coffee pot used, etc. We will explain a few of the best methods, with and without the biggin. But remember that by no process will the result be satisfactory unless good coffee is used, and, also, if you would have really good coffee you must take pains with it. If you will observe the principles which underlie the process you can serve up most delicious coffee which will make glad the hearts of those who drink it.

Amount of Coffee to Use.—Allow 1 heaping tablespoon of ground coffee for each cup of water; this is the standard rule, but if a large quantity is made the proportion can be a little less.

Filtered Coffee Without Egg.—Have the coffee heated hot, pour on the water boiling hot, cover closely, let it stand 5 minutes, strain it through muslin (having it wrung out of hot water) into the coffee pot (having that heated); cover it, set it on the stove and heat a moment (not boil) and serve. Have the milk thoroughly hot. The coffee may be heated in a pan or pitcher if more convenient.

Boiled Coffee Without Egg.—Scald the coffee pot; put in the coffee, pour on the water boiling hot, stir it well, bring it to a boil, move it to the back of the range keeping it *hot without* further boiling; add $\frac{1}{2}$ cup of cold water, let stand 5 minutes, turn out 1 cup coffee, pour back into the pot, do the same again, let stand 5 minutes to settle, and serve. Boiled coffee has a different flavor from the filtered, and many prefer it.

Boiled Coffee With Egg.—Scald the coffee pot; put in the coffee and egg shell, (or the egg or isinglass if they are used instead); add the water, boiling hot, cover closely, and boil 3 to 5 minutes—no more. Set where it will keep hot but *not boil*; pour in $\frac{1}{2}$ cup of cold water; pour out 1 cup of coffee to clear the spout and pour it back again; let stand 10 minutes, and serve.

French Coffee With Cold Water.—Heat the coffee, put it in the filter of a French coffee pot or biggin, add a very little *cold* water, a tablespoon at a time; let it stand 30 to 60 minutes, then pour in the balance of the water slowly, a cupful at a time; when it has all filtered through turn it out, and pour it through the filter again; cover it tightly, and when ready to serve bring it just to a boil (never boil it) and serve immediately. Coffee can be made thus at your leisure, and not heated until ready to serve it.

French Coffee with Boiling Water.—Heat the coffee, put it into the filter of the biggin, and pour on just enough *boiling* water to moisten it well; let stand 5 minutes, and pour on the balance of the water slowly, a cupful at a time, and wait 2 or 3 minutes between each cup; if wanted very strong turn out the coffee and pour it through the filter again; serve at once. This coffee should never boil; the best way to avoid this is to set the coffee pot in a pan of boiling water while the water is being filtered through the coffee.

Coffee by a Simple Method.—Heat the coffee, tie it in a muslin bag; scald the coffee pot, suspend the bag in it, pour on the water *boiling hot* (be sure it covers the bag), let it stand 10 minutes where it will keep hot but not boil, and serve. This answers somewhat the same purpose as the French biggin, but can be used by those who do not have one.

Steamed Coffee.—This can be made in a double boiler kept for the purpose,

or by setting the coffee pot in a pan of boiling water; steam 20 minutes, then strain it into a heated coffee pot, and serve.

Coffee with Cold Water.—Let the coffee and water stand all night in an earthen or china pot, closely covered; in the morning bring to the boiling point merely, and serve. No clearing or straining is needed.

Café Noir.—This is a French term meaning literally "black coffee." It can be made like other coffee, but *very strong*, using twice as much coffee (2 tablespoons) for each cup of water. It is served in small cups with sugar, but no milk or cream are served with it.

Café au Lait.—This is a French term meaning "coffee and milk." It is simply very strong coffee, to which is added a large proportion of good hot milk—half and half being the proportions. Sweeten to taste.

Vienna Coffee.—This consists simply in adding to each cup of coffee 3 tablespoons of whipped cream. Equal parts of whipped cream and beaten white of egg are sometimes used.

Iced Coffee.—Make a quart of extra strong coffee and let it get cold; beat 2 eggs very light, stir into them 2 cups milk and 4 tablespoons cream; sweeten to taste, and stand in the refrigerator 5 or 6 hours. Serve with a lump of ice in the pitcher. If no refrigerator is at hand the pitcher can be set for 1 hour in a pail of ice and salt ($\frac{2}{3}$ ice to $\frac{1}{3}$ salt); take care that it does not freeze. Iced tea can be cooled the same way.

Caramel Coffee.—Use caramel made as directed elsewhere for "Caramel." Add 1 teaspoon of good ground coffee for each $\frac{1}{2}$ cup of the caramel; let it boil for a minute, strain it, and add an equal amount of hot milk, or milk and cream. Children like it; so do "children of a larger growth."

Substitutes for Coffee.—Take 4 cups unground *wheat or rye*, add $\frac{1}{2}$ cup molasses, rub all together with your hands, and brown it in the oven like genuine coffee. When used, grind and put it in a muslin bag and boil it in a coffee pot; very good and slightly nutritious. If desired, it can be mixed with genuine coffee when used.

Oatmeal, ground barley or graham flour can be browned and used also. In using them allow 1 tablespoon to a cup of water; moisten it with a little cold water, pour on the water boiling hot, and let stand 10 minutes.

Corn Coffee.—Roasted sweet corn, browned without popping or hardening, is easily broken in a mortar, and makes a delicious drink for invalids, children, and those who cannot drink coffee. Try it.

Cornmeal can also be roasted brown and used; boil 5 minutes and strain; a little salt can be added to improve the flavor.

These substitutes for coffee contain no caffeine, nor anything similar to it, so that they possess no power as *stimulants*. Their value is simply that of hot water containing a little flavoring and nourishment, which is increased by the milk and sugar used.

COFFEE.—The origin of the use of coffee is involved in obscurity. It was not known to the Greeks and Romans. It was introduced into Europe in the 17th century. Mocha is an Arabian coffee. The brands from Central and South America were formerly considered inferior, but some of the best coffees now come from those regions. Maracaibo is often sold for Java, and is quite as good. Unground coffee is adulterated very little, but the ground coffee is almost universally adulterated.

"Coffee," says Prof. Johnstone, "exhilarates, arouses and keeps awake; it counteracts the stupor occasioned by fatigue, by disease, or opium, it allays hunger to a certain extent; it gives to the weary increased strength and vigor, and it imparts a feeling of comfort and repose." It appears to make the brain more active, and the demand for food less, by checking the change and waste of the body. Taken in excess, it produces tremors and contractions of the muscles, and an exhilaration somewhat like that of alcohol. It is not so stimulating as tea, and it does not increase the perspiration so much. It owes its stimulating effect to the caffeine and aromatic oils. It contains only about 1% of caffeine and 4% of tannin, and is therefore less injurious than tea to the coatings of the stomach.

Coffee loses 20 to 30% in roasting, but the roasting accomplishes several things. It makes it brittle and easily ground; the aromatic properties are developed as previously explained;

the tannin and other properties are rendered partly soluble in water, and its sugar is all converted into *caramel*; this gives color and part of the flavor to the coffee.

The color and flavor may be increased by mixing a little *caramel* with the ground coffee, a fact which many people do not understand.

Mixing Coffee.—Coffee can be mixed to obtain different flavors. Rio and Santos are strong, while Java, Mocha and Maracaibo are mild coffees. A rich, delicate flavored coffee is obtained by using $\frac{1}{2}$ Java and $\frac{1}{2}$ Mocha, and that is probably the most popular mixture. Some mix them half and half. For a strong coffee use Rio alone, or temper it as desired by mixing some of the milder brands with it. Some people like equal parts of Rio, Mocha and Java.

Keeping Coffee.—Green coffee, that is the unroasted bean, not only does not lose its flavor but actually improves by keeping for 2 or 3 years. It can advantageously be bought by the sack when the market is favorable, and it should be of a yellowish or brownish shade and well seasoned. Store it in a dry, cool place. As coffee readily absorbs bad odors nothing strongly odorous should be stored near it; much coffee has thus been ruined.

CHICORY.—This is prepared by cutting the roots of the chicory plant (*Cicorium intibus*) into small pieces and roasting them, much as coffee is roasted. It was first mixed with coffee by the Dutch, but is now used in all countries. While it is properly an adulteration, it is not deleterious. It does not possess any trace of the alkaloid *caffeine*, which is one of the peculiar properties of coffee, but it does possess an aromatic oil, starch, sugar (which will turn to caramel in roasting), nitrogenous substances and salts. It is used by some people as an independent beverage. It will give body, color and bitterness to coffee, and possibly modify its stimulant effect by acting as a diuretic, sedative and tonic. Some housekeepers add chicory to their coffee, using 1 to 4 oz. of chicory to a pound of coffee. Unfortunately, chicory is often adulterated, as well as coffee.

COCOA.

To Make Cocoa.—To $\frac{1}{2}$ gallon of water add 1 gill of broken cocoa, and let it boil gently until reduced $\frac{1}{2}$ (about 2 hours); equal parts of shells and cocoa can be used if preferred. If it cools and the fat is taken from the surface, and it is then heated again, it will digest more easily. Serve with cream, or scalded milk, and sugar. Cocoa can be flavored by adding a little vanilla extract if desired. In Spain, cloves, cinnamon and musk are also used to flavor it.

To Use Prepared Cocoa.—Allow 2 teaspoons to a cup; add enough cold milk to form a smooth paste, then add equal parts boiling milk and boiling water, and stir all together well. There are many preparations of cocoa, some of which are recommended for preparation at the table, but *all cocoa* is better for being boiled 1 or 2 minutes. Use hot milk to dilute it.

Cocoa Shells.—In use allow $\frac{1}{4}$ cup of the shells to 1 cup of water; pour on the water boiling hot and let them simmer gently 3 or 4 hours; as the water boils away add more; then strain, and serve. Sugar and cream, or hot milk, goes with it.

Iced Cocoa.—Make the cocoa in the usual way, and for each 2 cups beat in $\frac{1}{2}$ cup whipped cream; sweeten to taste, let stand till cold, and serve in glasses containing a little chipped ice.

COCOA is made from the seeds of the *Theobroma cacao*, a small tree which grows in Central and South America and the West Indies. The fruit is shaped like a cucumber; the outside skin is thick, the pulp sweet and palatable; the seeds are much like almonds, with a thin skin, and the kernel is dark, bitter, oily and aromatic.

Cocoa shells are the husks or shells. They contain little fat, but have more astringent matter than the seeds. They make a pleasant and wholesome drink, not stimulating, and well suited to nervous invalids and children. They need long boiling. An inferior cocoa is sometimes made by grinding the shells with the seeds.

Cocoa nibs are the seeds freed from the husks, roasted and cracked, but not ground, although some of the fat is usually removed. Prepared cocoa is made by grinding the kernel to powder, removing some of the fat, and adding a certain amount of sugar and starch. Some of the husk is ground and added to many of the cheaper cocoas, as an adulteration.

The cocoa bean contains about 1% of theobromine, which is an alkaloid much like caffeine and theine; about 50% of fat; from 14% to 18% of nitrogenous substance, $\frac{1}{2}$ of which is soluble in water; 4% of starch, and about 7% of an astringent principle much like tannin.

CHOCOLATE is made from cocoa nibs ground into a paste by machinery, mixed with sugar, flavored, and pressed into molds of various shapes. It is the most convenient and nutritious way of preparing cocoa. It does not stimulate the nervous system as much as tea and coffee do, and it is food as well as drink, satisfying hunger to some extent. Delicate stomachs will digest it more readily if the oily scum is removed from the surface after it is boiled, but for healthy people the scum is nutritious and need not be removed.

Coca is the dried leaf of the *Erythroxylon Coca*, a plant resembling the blackthorn. It is used by the inhabitants of Peru and Bolivia, who chew the leaves and make an infusion of them. It is estimated that 8,000,000 people use it, but it is little used in this country, except by a few cyclists or pedestrians. It derives its special properties from the alkaloid cocaine. It is a powerful stimulant to the nervous system and enables fatigue to be borne

more easily for a time, but there is some uncertainty about the exact effects of its continued use.

MATE, OR PARAGUAY TEA is prepared from the Brazilian holly. It is used in Paraguay and Brazil, but very little in this country. It contains 1 or $\frac{2}{3}$ of theine, about 16% of tannin, some aromatic oil, and gluten. It acts mainly on the nervous system, but also affects the digestive system. It is not suitable for general consumption, and is very injurious if habitually used.

CHOCOLATE.

To Make Chocolate.—Put the grated chocolate in a sauce-pan and dissolve it in a very little boiling water; then add the desired amount of cold milk, bring it slowly to a boil, and it is ready to serve.

The Spaniards mix chocolate so thick that a spoon can stand up in it. Chocolate is much improved by frosting, but to do this properly a French or Italian chocolatier is required, with a whisk passed through the lid so that it can be whisked while coming to the boil.

Chocolate "Maillard's Style."—Put into a sauce-pan $\frac{3}{4}$ cup of sugar, a tablespoon of salt, 1 cup grated chocolate and 1 cup boiling water and stir until smooth; then add 1 cup boiling water and 2 cups boiling milk and boil 1 minute only. In $\frac{1}{2}$ cup of cold milk dissolve 1 level teaspoon of corn-starch; stir it in, boil 1 minute more, take from the fire, add 1 teaspoon of vanilla flavor, and serve. The salt, corn-starch and vanilla add to its richness and flavor.

Chocolate with Egg.—Allow for each person 1 large tablespoon of grated chocolate; put it in a sauce-pan and slowly add boiling water, stirring and boiling a little until it thickens; then pour in enough milk to cool it, sweeten with sugar, and stir in 1 or 2 eggs well beaten, using more or less as desired; make up the desired quantity by adding milk, or milk and water, and *simmer*, not boil, 10 minutes; flavor with vanilla and serve. If allowed to boil *after* adding the eggs they will become "curdled."

Whipped Cream is best to serve with chocolate. It can be whipped with a Dover egg beater, and $\frac{1}{2}$ pint is enough for a dozen cups.

Choca.—This is *café au lait* and chocolate mixed in equal quantities. Many people like it for breakfast.

MISCELLANEOUS BEVERAGES.

Apple Water.—Take tart apples, quarter, core; add $\frac{1}{2}$ their weight of sugar, cover with water, and simmer till tender; strain through a jelly bag and cool. Put pounded ice in the glass when you drink it.

Blackberry Nectar.—Crush the berries, add an equal amount of water, and 1 teaspoon orange juice and 1 sliced lemon to each 2 quarts; let stand 4 hours, strain through flannel, and to 1 quart of juice add 1 cup sugar. Keep on ice till ready to serve.

Cherry Acid.—Dissolve 3 oz. citric acid in 1 quart water, pour it on a bowl of cherries and let stand 6 or 8 hours; strain off the juice, pour it over another bowl of cherries and let stand the same time; strain, and to each pint of juice add 1 pint sugar, boil, skim, bottle, and cork while hot.

Cocoanut Beverage.—Break 2 cocoanuts, saving the milk carefully; grate the cocoanuts, add them to the milk and also 4 pints water; put in a sauce-pan, and boil 5 minutes, stirring with a wooden spoon continually to prevent burning (it will ruin it to burn); then strain, add $\frac{3}{4}$ lb. powdered sugar, and mix well. Ice it and serve.

Cream Soda.—Boil together for 3 or 4 minutes $1\frac{1}{2}$ quarts water, $4\frac{1}{2}$ cups sugar, the juice of 1 lemon, and 2 oz. tartaric acid; when cold, add the well-beaten whites of 3 eggs, 2 tablespoons of flour blended in $\frac{1}{2}$ cup cold water; flavor to taste, bottle, and keep cool. To use, put 2 tablespoons in $\frac{3}{4}$ tumbler of water, add a saltspoon of soda, and drink when it effervesces.

Currant Shrub.—Mash the currants, strain, and to each pint of juice add 1 pint sugar, boil 10 minutes, and bottle when cold. If used at once it need not be boiled.

Currant Water.—To 2 cups red currant juice add $\frac{1}{2}$ cup raspberry juice, 2 cups white sugar, and 2 pints water.

Ginger Beverage.—To 4 cups water add 1 scant cup vinegar, 3 large tablespoons of sugar, and 2 teaspoons sifted ginger. Use lemon instead of vinegar if preferred. Another recipe is 4 cups milk, 4 cups water, and 1 tablespoon of ginger.

Gooseberry Shrub.—Take green gooseberries, pour on boiling water to cover, let stand till cool with a cloth spread over the jar; strain off the juice, heat it, and pour on again; then strain, and to each pint of juice add 1 pint sugar; boil, skim and bottle.

Grape Juice and Almonds.—Take 6 oz. sweet almonds; blanch and pound in a mortar, working in 2 cups grape juice and $1\frac{1}{2}$ cups white sugar; then add $1\frac{1}{2}$ quarts water, and when all are dissolved, filter it. Ice when used.

Grape Water.—Squeeze 4 lbs. grapes through a coarse cloth, and add $\frac{1}{4}$ cup of white sugar and 1 pint water to the juice. Serve with crushed ice in the glass.

Jelly Beverages.—Almost any jelly dissolved in ice water and sweetened to taste makes a pleasant drink. Most summer drinks are improved by adding a little orange juice.

Koumiss.—Take 6 cups sweet milk and 3 tablespoons of sugar; add 2 tablespoons of yeast and set in a warm place for a few hours until it ferments and the bubbles rise all over the top; then stir well for 3 minutes, bottle and fasten the corks. Keep cold (on ice is best) and use at once on being opened, as it soon spoils on exposure to the air. It can be used in 2 days, but it is better after 1 week. It will keep for months if kept cold.

Lemonade.—Into 2 cups boiling water put the thin yellow rinds of 6 lemons, and set in a warm place to infuse; take the juice of 12 lemons, add the infusion of the lemon peels, $1\frac{1}{2}$ quarts of water, and 1 lb. sugar, more or less, to sweeten to taste.

No. 2.—Squeeze the juice from $\frac{1}{2}$ doz. lemons, add the thin yellow rind of 2 lemons, 1 quart of water and $\frac{1}{2}$ lb. of sugar, more or less, to sweeten to taste. It is a great improvement to lemonade to add grated pineapple or ripe strawberries mashed. Remember in using either lemon or orange peel that the thin yellow rind, or zest, is all that should be used; the white part of the rind is bitter and injurious. (See what we say elsewhere about grating them.)

Coffee Lemonade.—Make coffee as for breakfast; when cold, strain and use it instead of water in making lemonade. It is healthful and refreshing in hot weather.

Effervescing Lemonade.—Into 2 cups granulated sugar work 30 drops of oil of lemon and sift; then sift in $2\frac{1}{2}$ oz. tartaric acid, and $2\frac{1}{2}$ oz. carbonate of soda; keep dry, in air-tight bottles. To use, stir 2 tablespoons into a glass of ice water.

Invalid's Lemonade.—Into a glass or water put a few drops lemon extract, and 2 tablespoons of lemon sugar. Can be made when lemons are not attainable.

Milk Lemonade.—In 4 cups boiling water dissolve 3 cups white sugar; add 3 cups milk and 1 cup lemon juice.

Portable Lemonade.—Mix thoroughly 6 oz. powdered sugar, 1 oz. powdered tartaric acid, and 1 drachm essence of lemon; dry thoroughly, divide into 24 parts

and wrap each one in paper; each powder will make a nice glass of lemonade, and can be used at any time.

Vinegar Water.—A little vinegar put into cold water, and then sweetened to taste, makes a pleasant beverage in hot weather. It is more refreshing and healthier than to drink large quantities of clear water. (It is the presence of the citric acid in lemons which makes lemonade so refreshing and healthful, and the acetic acid in vinegar serves much the same purpose.)

Mead.—Take 6 cups sugar, 2 cups molasses, $\frac{1}{4}$ lb. tartaric acid; pour on 3 pints boiling water, stir till dissolved, let cool, and add 1 spoonful essence of saffras, or flavor with fruit juices; then bottle for use. To serve, put 2 tablespoons into a tumbler $\frac{3}{4}$ full of ice water, add $\frac{1}{4}$ teaspoon of soda, stir it, and drink while foaming.

Oatmeal Drink.—(1) Dissolve $\frac{1}{4}$ cup of oatmeal in a jug of water; let settle, and drink cold. (2) Take $\frac{1}{2}$ lb. sugar, $\frac{1}{2}$ a lemon, sliced small, and $\frac{1}{2}$ lb. fine oatmeal; mix them with a little warm water first, and then pour on 4 quarts boiling water; stir well together, let settle, and use cold. Any other flavoring can be used instead of the lemon if desired. (3) Mix together gradually in 4 quarts of boiling water $\frac{1}{2}$ lb. sugar, $\frac{1}{2}$ lb. fine oatmeal, and 4 oz. cocoa. Use when cold.

ABOUT SUMMER DRINKS.—In hot weather there is nothing which quenches the thirst better, or which is more healthful and refreshing than oatmeal drinks. If laboring men, harvest hands, etc., would use them more it would be a great advantage to them. For heavy work they are far better than either beer, cider or spirits. Boil the oatmeal if possible; if not mix it with cold water. When heavy work is to be done without time to stop and eat, make it stronger. It can be used cold in summer and hot in winter. Cold coffee is thirst-quenching; so is cold tea, but neither equals oatmeal. Cocoa is refreshing and nourishing.

Orangeade.—(1) In 1 cup boiling water infuse the thin yellow rind of 2 oranges; then add $\frac{3}{4}$ cup of sugar and the juice of 6 oranges; ice before serving. (2) Take 1 lemon and 4 oranges, slice crossways, put into an earthen jug, add 4 cups boiling water, and let stand 1 hour, covered; then pour off, and ice before serving.

Orgate.—Blanch and pound in a mortar $\frac{1}{2}$ lb. sweet and $\frac{1}{2}$ oz. bitter almonds, working in gradually 2 tablespoons of orange flower water; then work in $\frac{1}{4}$ pint rose water and $1\frac{1}{2}$ cups pure water; strain, and add 3 cups simple syrup. Put it in a sauce-pan, boil up 1 minute, remove at once, and bottle. To use, add 1 tablespoon to a tumbler of ice water, soda, or seltzer water.

Pineapple Beverage.—Take 1 pineapple, peel, slice, and pound to a pulp. Take 2 cups water, add $\frac{3}{4}$ lb. sugar, boil, skim, and pour it hot on the pineapple pulp; add the juice of a lemon, and let stand 2 hours covered; then filter through cloth, and add 2 pints cold water. Ice when served.

Persian Beverage.—Take 1 cup rose-water, 4 tablespoons of orange flower water, 2 cups strawberry juice, and 2 cups simple syrup; mix well together. Ice it when served.

Raspberry Acid.—In 4 pints water dissolve 3 oz. tartaric acid; pour it over 4 quarts raspberries and let stand 24 hours; strain without pressing, and to each pint of juice add $1\frac{1}{2}$ lbs. of sugar; stir till it dissolves, let stand 48 hours; bottle and seal.

Raspberry Water.—Take 2 cups raspberry juice, 1 cup red currant juice, 2 cups sugar, 2 pints water; mix well.

Red Raspberry Shrub.—Pickle the raspberries in white wine vinegar for 1 week; strain through a jelly bag, and to each pint of juice allow 1 pint sugar; boil gently $\frac{1}{2}$ hour, and bottle. Use 2 or 3 tablespoons of the shrub to a glass of water.

Raspberry Shrub No. 2.—On 3 quarts fresh berries pour 4 cups cider vinegar;

let stand 1 day, strain, and pour the juice on 3 quarts fresh berries; let stand 24 hours, strain, and to each pint of juice add 1 pint sugar; boil gently 10 minutes, skim, and bottle when cold. Use 2 or 3 tablespoons to a glass of water.

Strawberry Shrub is made the same way.

Strawberry Acid.—In 2 pints water dissolve 2 oz. citric acid; pour it on 4 quarts ripe strawberries, let stand 24 hours; strain without pressing, and to each pint of juice add $1\frac{1}{2}$ lbs. sugar; boil 10 minutes, let stand 3 days, and bottle.

Strawberry Water.—Take 1 lb. ripe strawberries and 1 cup sugar; mash them together and add 1 cup cold water. Strain, and add the juice of 1 lemon.

Tisane.—Take 2 oz. dates, figs or prunes, cut them up, add 5 cups water and boil 1 hour; strain through cloth and serve ice cold. Dilute with cold water if desired.

Tomato Beverage.—Steam the tomatoes, mash them, and strain through cheese cloth; add $\frac{3}{4}$ lb. sugar to each quart of juice and let stand 8 or 10 days; then drain the liquor from the settlings, bottle, and cork tight. It improves with age. To use, add 1 or 2 tablespoons to the pint of water, and sweeten to taste. A little lemon juice will improve it.

Tutti Frutti.—Take 1 tablespoon mashed strawberries; 1 peach, cut fine; 1 tablespoon pineapple, cut fine; the juice of $\frac{1}{2}$ a lemon; 1 tablespoon of sugar; mix well, strain through a jelly bag, and mix with pounded ice.

Cider.—To improve cider, strain it through flannel while new and sweet, and put into each barrel $\frac{1}{4}$ lb. white sugar, and suspend a bag of raisins in it. If acidity appears in cider, add a little baking soda which neutralizes the acid, but add it on the first appearance of the acidity. If cider turns black it is caused by the presence of oxide of iron which turns dark on exposure to the air; adding a little tartaric acid will usually correct it.

Ginger Pop.—Infuse 8 oz. bruised root ginger in 5 gallons boiling water; add 4 lbs. sugar, and 2 oz. cream of tartar, and 1 oz. tartaric acid; when lukewarm, strain, add 1 quart yeast, and 1 bottle lemon essence to flavor; let stand over night and bottle.

Lemon Beer.—Into 2 gallons of boiling water put 2 lbs. sugar, the thin yellow peel of 2 lemons, and 1 oz. bruised ginger; when lukewarm add $\frac{1}{2}$ pint yeast; let stand over night, or a little longer, to ferment, and bottle.

Spruce Beer.—Into 4 gallons of water put 3 lbs. sugar, $\frac{1}{2}$ oz. essence of spruce, a little zest of lemon, 1 oz. ginger, and $\frac{1}{2}$ pint of yeast; let stand 24 hours, and bottle.

SYRUPS.

Fruit syrups are made by adding enough sugar to fruit juices to preserve them. Fine flavored fruit should be used, because syrup of fine flavor cannot be made from fruit lacking flavor. Decayed fruit also will affect the flavor of the syrup, and should not be used. If fruit juice is allowed to stand 2 or 3 days until fermentation begins, it will change the pectose it contains so that it will not jelly, and jellying is not desired with fruit syrups. They should be made in granite, porcelain or aluminum kettles, as the acids the fruit juices contain will act on other metals, and change and injure the color of the syrups, while in metals like brass, tin, and copper they will also develop poisonous compounds. If boiled hard, or heated too hot, it will injure the flavor and color of the syrups. A double boiler is the best to use to prevent this. Stir syrups with a wooden spoon.

Fruit syrups can be used when fruits are out of season, and they not only make delicious drinks, but they can also be used for puddings, water ices and ice creams. They are best kept in a dark, dry, and cool place.

Simple Syrup.—Take 2 quarts water and 7 lbs. white sugar; heat gently until dissolved, and strain.

Barberry Syrup.—Take good ripe barberries, strip them, and put them in a porcelain kettle with water enough to cover them; let them *simmer* gently, but do not boil or burn them, and when done squeeze out and strain the juice; allow 1 quart sugar to 1 pint of juice and set the pitcher holding them into a pan of boiling water until the sugar is dissolved; then bottle it.

Blackberry Syrup.—Take $\frac{1}{2}$ gallon blackberry juice, add 4 cups white sugar (heaping), $\frac{1}{2}$ oz. each of allspice, cinnamon and nutmeg, and $\frac{1}{4}$ oz. cloves, pulverize the spice, boil all for $\frac{1}{4}$ hour, strain, and when cold, bottle and cork closely.

Cherry Syrup.—Bruise 6 lbs. cherries with the stones in (breaking them); add 3 cups hot water and boil $\frac{1}{4}$ hour, strain through a jelly bag, add 3 lbs. sugar, and boil until it will sink to the bottom of a cup of water when dropped from a spoon; then turn into jelly cups and cover with paper dipped in the white of egg. To use for a drink, put a spoonful in a glass of water, let stand 10 minutes, stir it, and fill with pounded ice if you have it.

Currant Syrup.—Mash the currants, cover them over, and let them stand 3 or 4 days to ferment; then strain through a jelly bag, and allow 2 lbs. sugar to each pint of juice; dissolve the sugar slowly (in a farina boiler is best, as there is no danger of its burning), and then let it become cold; put it in small bottles, filling them full; seal tightly and put away.

Raspberry Syrup can be made the same way.

Lemon Syrup.—In a porcelain pan dissolve 2 lbs. white sugar and 2 cups cold water, and let it boil 2 minutes; then add the juice of 4 lemons, and $\frac{1}{2}$ oz. tartaric acid; after it has cooled a little add $\frac{1}{2}$ teaspoon lemon essence. When quite cold, bottle it.

Lemon Syrup No. 2.—Rub the yellow rind of 6 lemons with 1 lb. lump sugar; moisten the sugar with as much water as it will absorb, and boil it to a clear syrup; to this (without letting it boil any more) add the juice of 1 doz. lemons, stirring it beside the fire; bottle it at once, and cork when cold.

Lemon Syrup No. 3.—Mix 4 cups water and 2 lbs. sugar, and boil till clear; when cool, add 1 teaspoon essence of lemon and 1 oz. citric acid, and bottle when cold.

Orange Syrup.—Select fine, ripe oranges, extract the juice, and to each pint add 1 pint sugar; boil gently 10 minutes, skim and bottle when cold. An excellent flavor for sauces, as well as a delightful drink.

Rose Syrup.—Take $\frac{1}{2}$ lb. rose leaves, pour on 1 pint of *boiling* water and let stand till next day; strain through muslin, add 2 lbs. sugar, and heat in a double boiler until the sugar is dissolved; let it cool, and bottle when cold.

For Violet Syrup use violets in like manner, but do not allow the calyx or stalks to be mixed with the leaves.

Sarsaparilla Syrup.—Into 5 quarts of water put $\frac{1}{4}$ lb. Spanish sarsaparilla, and boil until it is reduced to 2 quarts; add $2\frac{1}{2}$ oz. tartaric acid and 4 lbs. sugar; mix, boil 3 minutes and bottle. To use, put 2 tablespoons in a glass of water, add a little soda, and drink when it effervesces.

Strawberry Syrup.—Wash the strawberries, and strain through a jelly-bag; prepare a syrup and bring it to the "soft ball degree" as directed in "Candy making," and to each pint of the syrup add 1 pint of the strawberry juice; bring it to a boil, skim, and remove from the fire. Bottle and seal when cold.

Pineapple Syrup can be prepared by gradually adding strained pineapple juice to the syrup, instead of the strawberry juice, and finishing the same way.

Tomato Syrup.—Take good ripe tomatoes, squeeze out the juice, and to each pint of juice add $\frac{1}{2}$ lb. sugar; bottle and set away. No alcohol is needed to preserve it. It will keep for years, makes a delightful beverage for the sick, and will resemble pure wine in flavor.

Vanilla Syrup.—Take 2 quarts of simple syrup, into some of it rub $\frac{1}{4}$ oz. citric acid; add $\frac{1}{2}$ oz. fluid extract of vanilla, and mix all; then bottle.

Wintergreen Syrup.—To $2\frac{1}{2}$ quarts of simple syrup add 25 drops oil of wintergreen, and burnt sugar enough to color it.

Artificial Honey.—(1) Take 10 lbs. good brown sugar, add 4 lbs. water and gradually bring it to a boil, skimming it well. When it has become cooled, add 2 lbs. bee's honey and 8 drops of peppermint. A better article can be made with white sugar instead of brown, with 1 lb. less of water and 1 lb. more of sugar. (2) Another recipe is: Take 20 lbs. coffee sugar, 6 lbs. water, 4 oz. cream tartar, 4 tablespoons vinegar (strong), the whites of 2 eggs, well beaten, 1 lb. bee's honey, 20 drops Lubin's extract of honeysuckle. Place the water and sugar in a kettle and place over a fire; when lukewarm add the cream of tartar, stirring at the time; then add the egg, and when the sugar is melted put in the honey and stir it well until it comes to a boil; then take off, let stand 5 minutes, strain, and add the extract last. Let it stand over night and it is ready for use.

INVALID COOKERY.

While in robust health the appetite is undoubtedly an admirable guide in the choice of foods, but when debility and disease are present intelligent knowledge of the properties of different foods is necessary, and experience should guide in administering them. Ignorance in a sickroom is most deplorable, even when accompanied by the utmost family affection. In many disorders a knowledge of dietetics is as important as a knowledge of *materia medica*, for the action of a medicine may be counteracted by unsuitable diet. When a patient is very sick the diet is prescribed by the doctor, and his directions in regard to the foods to be given should be carried out quite as implicitly as they are in giving the medicine, for they are usually quite as important. Many persons have a superstitious faith in the cravings of the sick and will disobey the doctor to gratify the patient, but this is very unwise, as in disease the appetite is not a safe guide, and many a patient has been seriously injured or even killed by such folly. In some cases, (notably after fever) the patient develops a surprising appetite which, in the state of his digestive organs, it would be dangerous to gratify. Other patients will actually sink from exhaustion while refusing all food. Still, if a desire for any particular article is expressed it would be well to call the doctor's attention to it, as it may be a valuable indication of the needs of the system.

In general it may be said that in feeding the sick 2 objects are kept in view: (1) to choose the food which will give least work to the part of the digestive canal which is most deranged; (2) to compensate for the waste or drain upon the system. The doctor should thoroughly understand the process of digestion, the needs of the system and the composition of foods, and be able to make the selection of foods more skilfully than an untrained person. It is sometimes thought that when a person is ill he should be coaxed or coerced into taking as much food as possible, but it should be remembered that it is only the food which is assimilated by the system which is of any real benefit to the patient, and to *overload* the feeble digestive organs, will impose a burden that will be a positive detriment; therefore, in case of serious illness, get directions from the doctor regarding the quantity as well as kind of food to be given. The preparation and cooking of food should be thoroughly understood by a good nurse, so that should any dish be sent from the kitchen imperfectly prepared, directions can be given how this can be remedied.

The conditions of different patients vary so greatly (one may be suffering from an acute disease like a fever, while another has some lingering chronic disease; one may be suffering from over-work and nervous prostration, while another suffers from a lack of exercise, and so on) that it is evident that no exact rules can be given which will apply to all cases, but the following hints in regard to sickroom feeding may be suggestive to our readers.

(1) Give little food and often. What is eaten with a relish does more good than twice as much swallowed with disgust, so do not urge a patient to swallow large quantities at once; but remember also that very sick people often refuse to swallow anything, though they may be actually sinking for want of food.

(2) Let the food come at stated times and punctually. A convalescent looks forward to meals as the great events of the day, and frets and worries if they do not come on time, and a very weak patient may faint and flag if instead of an hour it is 20 or 30 minutes longer than that between the times of feeding. If obliged to wait long, a patient may lose the desire to eat, and turn against the food when brought.

(3) As a rule, patients should not be awakened to be fed, though it may sometimes be necessary to do so. Amateur nurses often forget to feed patients in the small hours of the morning, although at that time the patient's strength is at the lowest ebb.

(4) When there is no appetite, give such food as affords the most nourishment for the least work to the system. When very weak, the exertion of eating is quite a tax, so put the greatest amount of nourishment in the least space.

(5) Endeavor to give the food most appreciated by the patient, provided it is not injurious. Do not let a convalescent know before hand what the bill of fare will be, as surprises are often very pleasing to him.

(6) For a convalescent the food should be as varied as possible, for invalids easily tire of the same thing. If the food may not be varied the mode of serving it may, and a stray flower or a new plate is better than no variety at all.

(7) For invalids never make a large quantity of one thing, as they seldom require much at a time. Only as much as the patient is likely to eat should be taken into the sickroom, and at once remove what remains. Never leave food at the bed-side or about a sickroom; if the patient cannot eat it, take it away and bring it again in 1 or 2 hours. As a rule nothing made for an invalid is fit to be used a day after it has been prepared, and neither food nor drink, except in cases of absolute necessity, should be kept in the invalid's room, as the air and temperature are apt to hasten decomposition.

(8) In case of infectious fevers all remains of food should at once be burned, and *on no account* be eaten by another person. The nurse should *not* eat in the sickroom.

(9) Have every thing tempting in appearance and daintily served. See that the linen is spotless, and the prettiest china used to hold the sick one's food. Never give an invalid soiled or crumpled napkins. See what we say about crumbs in our article on the "Sickroom."

(10) Do not put a very little broth in a very large basin. If a limited amount of drink is to be given it is better to put the right amount in a small glass than to hand a large glass full, and tell him how many swallows to take. Gruel served in a tumbler is more appetizing than when served in a basin or cup and saucer. It is better not to have a cup more than $\frac{3}{4}$ full, and then it will be less likely to spill over. Never have anything spilled into the saucer on handing an invalid a cup and saucer. Little things like these tell on the sensitive nerves of an invalid more than many people think.

(11) Sponge the hands and face of an invalid carefully before serving any meal.

(12) If a feeding cup is used, scald it carefully and keep it quite clean; warm it before using it for hot food. Keep one for milk, and lay that in water; have a separate cup for beef tea and broth.

When much fever is present very little gastric juice is secreted, and therefore at the commencement of a fever there is little craving for anything but cold water. All nourishment given in high fever should be in fluid form, and it is very doubtful if starch can then be converted into sugar. All this will be plain by referring to our article elsewhere on the "Processes of Digestion." Lemonade is agreeable as the acid taste pleases the patient's palate, and the sugar passes into the system without digestion or making any demands on the powers of the stomach, and various other drinks can be given. As the fever subsides the gastric and intestinal juices are sufficiently secreted to digest farinaceous foods, and the medical man can decide in each case what articles are most suitable. By degrees the patient is able to satisfy his natural appetite, convalescence becomes more rapid, and by-and-by steaks and other food can be eaten again. This would be dietetic regimen.

The following quotation from Dr. Pavy's "Treatise on Food and Dietetics," will be of interest and value. Regarding the foods which may be given patients as convalescence advances, he says: "In febrile, acute, inflammatory, and other conditions where an absence of digestive power prevails . . . the food should be confined to such articles as beef tea, mutton, veal, or chicken broth, whey, calf's foot, and other kinds of jelly, arrowroot, and such like farinaceous articles, barley water, rice, mucilage, gum-water, fruit jelly, and the juice of fruits, as lemons, oranges, etc., made into drinks . . . Where a little latitude is allowable, the employment of milk and eggs in a fluid form may be sanctioned. *Bread jelly*, which is made by steeping bread in boiling water and passing it through a sieve while still hot, is also an article that may be used either alone or boiled with milk. From this, as circumstances permit, an advance may be made to substances which do not throw much work on the stomach, such as rice, sago, tapioca, bread and custard puddings, and stale bread and toast sopped. Next may be allowed fish . . . which should be boiled or broiled, and not fried. As power becomes restored, calves' feet, chicken, game and butcher's meat—mutton to

begin with—may be permitted to follow,” and so on till ordinary diet is reached. The object is to convey fuel-foods (carbohydrates) to the system, and only enough albumenoids (flesh formers) for repairing the tissues. Later, an abundance of albumenoids will be needed to rebuild the wasted tissues.

In cases of fever, pure milk as the main article of diet is superior to anything else, especially in fevers which cause disturbance of the stomach and bowels. Beef tea, which is commonly used, is often irritating; but milk is soothing, cooling, and at the same time nourishing. A patient who can take milk has a greater chance of recovery. With some persons it does not agree, either in sickness or health. Mixing $\frac{1}{3}$ to $\frac{1}{2}$ its quantity of lime water with it will help it with some. Soda water and milk, or seltzer water and milk, agree with some. Boiled milk is more digestible with some, especially hot boiled milk. Only in rare cases should the cream be removed. The slightest souring is sufficient to make milk disagree with a patient. In the early stages of convalescence, hot milk, given often in small quantities, with a little toasted bread, or thin gruel added, is often excellent.

In chronic disorders of the stomach and bowels a milk diet is most valuable. It allows the stomach to have almost absolute rest, which is often all that is required. As it is already prepared for absorption into the system it, in fact, requires no digestion. When milk is constipating, a little salt sprinkled in each glassful will obviate the difficulty. When it has an opposite effect, a few drops of brandy in each tumbler of milk will prevent purgation. If diluted with $\frac{1}{3}$ lime water it will rarely cause biliousness or indigestion. The idea that milk should not be eaten with pickles is a mistake, as it is curdled by the gastric juice as soon as swallowed, but it is better to be sipped in small quantities than taken in large amounts at one time if acids accompany it.

Cream can often be taken freely when nothing else will remain on the stomach. It should always be fresh, and may be diluted with water or given pure. In many chronic diseases it is irreplaceable by any other article whatever. With many people it is easier of digestion than milk, and it seldom disagrees.

Buttermilk is often very useful. It is almost always allowable in sickness, especially in fevers with gastric symptoms.

Whey is often found useful when every preparation of fresh milk disagrees. It is not very nourishing, but is digestible, and is a refreshing drink in inflammatory disorders. It is rich in organic salts.

The fats for the system are best obtained by using cream, or butter which is next best, rather than fatty meats. Do not have the butter made into a sauce, nor melted and soaked into food. When exposed to heat (as for buttered toast) it is very likely to disagree with dyspeptics and other invalids. All decomposing fats, as a rule, disagree with the stomach. The value of cod liver oil in many diseases consists in the fact that it is the most easily digested of fats, not even excepting cream.

Eggs are nutritious and easily digested when raw or lightly cooked; they are more digestible if beaten to a froth. Do not submit them to a high temperature in cooking, for, as we explain elsewhere, that will make them tough and indigestible. The white is least likely to disagree with a bilious patient. Use only fresh eggs for invalids. Eggs boiled 20 minutes are more digestible than when boiled 10; boiled 10 minutes, they become tough and horny, but become mealy and dry when cooked 20 minutes and crumble up readily so that they are easily acted on by the gastric juices. Eggs in the tough and horny state are insoluble, and pieces often stay in the digestive tract till they decompose, when they emit ammonia and sulphuretted hydrogen which are injurious to the system.

Beef Tea is not a nourishing food, although it used to be so considered, and it is now known to have more value as a stimulant than as food, properly speaking, and yet many persons place their main reliance on it, and think the more a patient swallows the sooner he will recover. It should be combined with other foods, or given alternately when possible, and when containing farinaceous foods it is useful. If well made, it is a pleasant and refreshing beverage. A healthy man would starve on beef tea alone, and so would an invalid.

Broth made from chicken is more nutritious than that made from either beef or mutton, and the sick often find it very useful. The meat extracts (Liebig's and others) are made by boiling lean meat in water, and then taking out the insoluble parts and evaporating it down. As some of the most nutritious parts of the meat are insoluble in water the extracts contain comparatively little nourish-

ment. Their principal value is as stimulants, and they often improve the appetite so that more nutritious foods are craved and digested. Other food, therefore, should be given with them. A German took 2 dogs and gave one meat extract and the other water, and nothing else. The one given the extract lost flesh faster and died before the one having only water.

Jelly, Gelatine and Isinglass have excited much discussion. Alone they are of little value, and it is a mistake to place much reliance on them for nourishment. (See our remarks on this subject under the head of "Gelatine Preparations.")

Toast is valuable for invalids because by toasting part of the starch is turned into dextrin, which is easily digested. Cut the bread thin, hold it a little ways from the fire to dry, then hold it closer till it browns. Serve it dry, or buttered lightly, or with hot water or milk poured on it.

Flour, Rice, Barley and Oats are preferable to arrowroot, sago, tapioca, etc., for nourishment, if suitably prepared. Browned flour we mention elsewhere. *Rice* is valuable for invalids, as it taxes the digestive powers very little. It can be roasted like coffee; then cook it in the usual way, and serve it with cream. *Barley* for invalids should be thoroughly cooked. Use *oatmeal* cautiously until the digestive powers become strong. *Cornmeal* because of its fat is valuable for thin, chilly invalids, but cook it *thoroughly*. *Macaroni* is nutritious and easily digested.

Fine Flour Bread is indigestible because it does not readily separate into particles in the stomach, so as to be readily attacked by the digestive fluids. A little fine Indian meal added to fine flour bread will obviate this difficulty and cause it to separate quickly. *Cornmeal* is also loosening in its effects upon the digestive organs, therefore in a relaxed condition of the bowels cornmeal should be avoided. *Maltine*, taken with fine flour bread or biscuit, will assist digestion. Thorough mastication must be insisted on, for that is the first process of the thorough digestion of all starch foods in which fine flour is used. (See our article on "Processes of Digestion.")

Tea, Coffee and Cocoa.—*Tea* is often misused for invalids. A little tea or coffee restores them quite as much as a great deal. As a rule, do not give either after five o'clock in the afternoon. Sleeplessness in the early night is generally from excitement, and is increased by tea or coffee; in the early morning it comes from exhaustion, and is relieved by tea. In general, the dry and coated tongue prefers tea to coffee. *Coffee* is a better restorative than tea. *Cocoa* is often recommended instead of tea or coffee, but it has a very different effect. It is a food rather than a beverage, owing to its fatty character, and for invalids it has no restorative or stimulating effect, and its fat is often oppressive to a weak stomach.

Vegetables.—If an invalid is allowed to eat vegetables, be careful to choose only such as are young and tender, perfectly fresh, and sufficiently cooked; never send them up half done. The cabbage tribe are unsuitable, as they are likely to produce flatulence, and all the pulses are difficult of digestion. A mealy old potato is more digestible than a new one. The best way to use it is to boil, remove the inside, mash thoroughly, and use a little salt and cream to season it.

THE PRINCIPLES INVOLVED IN BOILING VEGETABLES.—These are not generally understood, and this may be a good place to explain them. Each minute granule of starch, in its original state, is surrounded by a thin sheath of cellulose, much like the shell on a chestnut; this cellulose sheath is nearly insoluble in the digestive fluids, so that they cannot get at the starch inside. In boiling, the starch swells and bursts this sheath; the starch thus liberated is readily attacked by the digestive fluids, which turn it into sugar, and then it is assimilated by the system. The object, therefore, in boiling any form of starch is merely to burst these cells, and that is best done by having the water as hot as possible, and by keeping it boiling actively as long as the article is in it. As soon as the starch cells burst, however, the vegetable should be taken out, as, if it is left in longer, the starch will absorb water and deteriorate. When starch is improperly cooked its digestion is very difficult and much waste is caused the system, which is quite a loss even to one in good health; but for invalids it is particularly important that the starch should be suitably cooked so as to be easily digested. The difference in the digestibility of different forms of uncooked starch (which is alluded to on page 17) is caused by the fact that the cellulose coating in some forms of starch is tougher than in others. When properly cooked, so that its cellulose sheath is burst open, all forms of starch are about equally digestible.

In baking potatoes the heat of the oven causes the starch granules to swell and burst their sheaths, much as a chestnut or a grain of popcorn bursts open when roasted, thus liberating the starch.

The juice of fruits can be used early in convalescence for preparing drinks

for an invalid, but do not use the pulp. When fruits can be used again a baked apple can first be safely eaten.

The appetite may be unimpaired or even greatly increased in many chronic diseases, like dyspepsia, etc., and in these cases there will be danger of yielding to the claims of appetite and overstepping the bounds of prudence, so that an undue amount or an unsuitable food may be eaten, for which reason it is of great importance for such persons to pay attention to some suitable rules for the diet.

People who are subject to gout and biliousness should remember that "bile-poison" and "gout-poison" are of albumenoid descent, and that they follow a diet too rich in albumenoids like the avenging fates. The system requires for the growth and repair of its tissues a certain amount of albumenoids, but when an excess is eaten the surplus is imperfectly oxydized and the blood becomes laden with waste, and the result is biliousness or gout. People with a tendency to these diseases should eat very sparingly of albumenoid foods like meat, eggs, beans, cheese, etc.

People with a tendency to consumption should eat nutritious and easily digested foods, and plenty of fats in their most easily digested form, such as cream, good butter, oil and salads, oatmeal, cornmeal, etc., rather than in the indigestible form they assume when mixed with starch.

Diet.—Every year diet plays a larger part in the skilled treatment of disease; it is harmless where drugs are dangerous, and it can often cure where drugs are useless or worse. There are many diseases where the only hope of cure or alleviation lies in rigid abstinence from certain kinds of food, and in many common ailments some slight change of diet is by far the best remedy.

A deficiency of oil or fat in the diet develops scrofulous diseases, and yet we often hear, when fat meats, cream, butter, etc., are suggested for scrofulous children "O, that will feed the disease," when that is likely to be the one thing that would most assist a cure. Fat is heat giving, and is naturally craved by most delicate children. The following is about the proportion of fat in the different grains: Rice 1; Rye 1.75; Wheat 2.10; Oats 3.30; Indian Corn 5 (the amount of oil varies in different varieties of corn, the northern yellow containing much more than the southern white). Oatmeal porridge and milk have, with intelligent people, long been regarded as the best food for the nursery. It owes its chief value for that purpose to its large amount of fat, but with many children it does not agree, and cornmeal porridge possessing so much fat can often be used in its place to advantage. Thoroughly cook it *always*, as it is only indigestible when improperly prepared. The dietary for children from 2½ to 7 years of age, which has been settled by long experiment in various children's hospitals is as follows: At least 12 ounces of bread daily; 1 oz. butter; ½ pint of milk; 2 oz. meat; 6 oz. vegetables; 6 oz. gruel or porridge. Rapidly growing children require an abundance of meat (or albumenoids) to build up the rapidly growing system.

Lime.—In parts of the country where lime does not exist in the soil, so that the water is deficient in lime, use ½ pint of lime water with the mixing for bread every time bread is made. In this way children will get the lime which is necessary for the proper solidifying of the bones, and the preservation of the teeth. We explain elsewhere how to make lime water.

When a patient suffers from sickness and nausea every food should be given iced, or as cold as possible, and in the smallest quantities, and it will be a good plan to slip a little piece of ice into the patient's mouth immediately after giving the food.

Ice for the sickroom can be nicely kept through the night by tying a piece of strainer cloth over a large pitcher, with a piece of twine around it, leaving a sag in the center on which may be placed 1 or 2 pounds of ice—enough to serve the invalid through the night. Fold up the corners of the cloth over the ice, and cover it again with a square of cotton flannel, folded 4 double. When a bit of ice is needed have at hand a large darning needle and thimble; press steadily on a corner of the ice with the needle, and flake off pieces as needed. The water in the bottom of the pitcher can be poured through the strainer without disturbing the ice which is covered with the corners of the strainer.

Fat may be removed from beef tea or broth by letting it get cold, when it can all be taken off; or, if in haste, by drawing a piece of blotting paper edgewise over the surface, and it will take up the fatty particles. In some cases a little fat will be beneficial; in others it is better to remove it all.

Milk Soup.—Use 1 quart of new milk, 1 saltspoon of salt, 1 saltspoon of powdered cinnamon, 1 teaspoon of granulated sugar; scald all together for an hour in a pitcher set in a kettle of water; then add the well-beaten yolks of 2 eggs. Good for delicate persons and children.

Mutton Broth.—Boil slowly about 2 lbs. of lean mutton for 2 hours; skim it carefully; do not put in too much salt—more can be added if needed; a little barley or rice may be added; strain, and take off all fat with blotting paper drawn across it.

Chicken Broth.—Put half a chicken into a small stew-pan with a teaspoon of rice, a little pepper and salt. Cover with cold water and boil slowly until the meat falls from the bones; then take out the chicken, leave the rice in, and serve. Very nutritious.

Essence of Meat.—Take 1 pound of good lean beef (have it free from fat and skin), chop it into small pieces, and put it into a glass fruit jar adding 1 tablespoon of water, and screw on the cover; set it in cold water, heat gradually to 150° to 160° (don't let it boil), and keep it there 2 hours; the water in the outside kettle must not get into the fruit jar; remove all fat with a piece of clean blotting paper, and add salt and pepper to taste. Chicken or any other meat can be treated the same way. The pure essence of meat, thus extracted, will be received by the most delicate stomach, and is also valuable where considerable nutriment is required in a concentrated form. A single tablespoonful can be taken by an invalid, and would afford as much sustenance as $\frac{1}{4}$ pint of broth. It becomes a jelly when cold, and may in this way be eaten with chicken or game.

Stewed Beef Essence.—Cut $\frac{1}{2}$ lb. of beef into bits, salt it, and in a few minutes, squeeze it, let it stand $\frac{1}{2}$ hour, heat hot, but do not boil it, and serve at once.

Broiled Beef Juice.—Broil $\frac{1}{2}$ lb. of round steak 1 or 2 minutes on each side, cut in bits, squeeze out the juice, salt and serve.

Broiled Steak.—Wipe the steak with a clean, wet cloth, take a piece of the fat to grease the gridiron, broil over a bright fire 4 or 5 minutes, turn often, put on a hot plate, season with salt, pepper and a little butter.

Toasted Mutton.—Cut very thin slices from loin of mutton, with a sharp knife. Lay each slice on a toasting-fork, and toast over a clear hot fire. Sprinkle with a little pepper and salt. It may be eaten with a thin piece of toast.

Meat Patty.—Scrape a piece of lean beef-steak with a very dull knife, holding it with the left hand, and scraping from you with the right. This removes the tender meat fiber and leaves the tough connective tissue. Press the former into a thin cake or patty, and broil on a toasting fork over a very hot fire. When done, season to taste. Eaten with toast or thin cut bread and butter it makes a very delicate dish. The cake or patty, prepared as above, may also be fried in a little butter, and will be found very nutritious, and a weak stomach will retain it.

Raw Beef Sandwiches.—Scrape fine 2 or 3 tablespoons of raw, juicy, tender beef, season slightly with salt and pepper, spread on thin slices of bread, and put it in a toaster and toast slightly.

Cooking Eggs for Invalids.—Put 3 cups of boiling water into a skillet and add a cup of sweet milk and a little salt. Have it boiling hot, then break the eggs in, and cover and set back where they will not boil. Let the eggs remain in until they cook white on top, but not hard.

Steamed Eggs.—Put 1 or 2 tablespoons of new milk in plain patty tins, and break fresh eggs into them; add a little salt and put into the steamer and steam until white, over the yolks, but not long enough to harden them. Both of these are very nice and look very inviting.

Beef Tea.—Mince a pound of tender beef, free from fat, and put it into a covered crockery jar; pour on barely enough cold water to cover the meat, and allow it to soak 2 or 3 hours; then place it on the stove or in a moderate oven, and let it *simmer* (*don't* let it boil—it should not go above 160°) for 2 or 3 hours longer, adding a little water from time to time as it evaporates; strain and season to taste. To make it more nourishing a little arrowroot, rice or barley may be added.

Mutton or Veal may be treated the same way.

If *beef tea* must be had quickly broil a thick piece of steak, turning it often, to keep in the juices, as explained elsewhere for broiling; then cut it into small pieces, and press it in a lemon squeezer.

Prof. Liebig's Beef Tea.—A saltspoon of the extract (Liebig's) is stirred in a cup of boiling water. Add salt and pepper as desired. If too much of the extract is used, which is a common mistake, the drink has a bitter taste. Dry toast eaten with it makes a palatable dish.

Broiled Beef Tea.—Broil $\frac{1}{2}$ lb. of lean, juicy beef 1 minute on each side, cut in small pieces, pour over it $\frac{1}{2}$ cup of boiling water, squeeze it, salt the juice and serve instantly. Do not heat it again.

Stewed Beef Tea.—Use $\frac{1}{2}$ lb. of round steak, cut fine, soak it in 1 cup of water $\frac{1}{2}$ hour, let it heat (not boil), strain, salt and serve. (In making beef tea it is well to know that 1 lb. of the round will yield 4 oz. of beef extract, and contains more nutriment and is much cheaper than that bought ready prepared.)

Apple Water.—Cut 3 or 4 apples in slices, pour boiling water over, allow to stand 2 or 3 hours, strain, and sweeten slightly. This is a very refreshing drink.

Barley Water.—To 1 cup of barley (first washed) add 1 quart of water. Allow to simmer until $\frac{1}{4}$ has boiled away. Strain, and to this add a tablespoon of sugar dissolved in 1 cup of hot water. This is an excellent drink in fibrile affections; also it is very refreshing and somewhat nourishing. To make a mild laxative drink for children, add to the barley 8 or 10 figs cut in pieces. It is a delightful drink, and quite laxative.

Rice Water.—Wash 2 oz. of rice; boil 1 hour in 2 quarts of water; strain, and sweeten; flavor with nutmeg. It is a very pleasant drink and efficacious in the bowel trouble of children.

Toast Water.—Cut 4 slices of bread thin; toast to near burning. Pour over them 1 quart of boiling water and allow to cool, and strain. It may be flavored with a little lemon juice. This is a most wholesome and refreshing drink.

Hot Lemonade.—Peel the yellow rind off 1 lemon, squeeze, and add a glass of boiling water; sweeten with crushed sugar. This is an excellent drink in the feverish condition of colds. It will quickly induce perspiration.

Egg and Lemon Juice.—Dissolve 1 oz. sugar in 1 pint of water, and stir in the juice of 1 lemon; add the white of 1 egg and froth up. Ice it if desired.

Egg Drink.—Use 1 egg, 1 teaspoon of sugar, 1 teacup milk. Beat the egg well in a cup with the sugar, put the milk on to boil, and when it boils pour it over the egg, beating with a fork all the time. It is refreshing and invigorating.

Egg and Lime Water.—To a wine glass of lime water add the white of 1 egg beaten so it will not string. Give it in small quantity and often. It is excellent in obstinate vomiting and irritation of the stomach.

Lime Water.—Put 2 teaspoons of lime water in $\frac{1}{2}$ tumbler of milk; add a little sugar to taste. This will often be retained when the stomach rejects all other kinds of food. The same may be said of milk and soda water in equal proportions. We explain elsewhere how to make lime water.

Flaxseed Tea.—To 1 cup water allow 1 tablespoon flaxseed; pour on the water boiling hot, boil 5 minutes and strain. Sweeten with sugar, and for flavor add a little lemon or orange juice.

Linseed Tea.—Boil 2 tablespoons of the unground linseed in 3 pints of water until reduced to a quart; strain, and add lemon juice to relieve the flat taste. A very useful drink in colds and coughs. It is also good in affections of the urinary organs.

Licorice Tea.—Take 2 oz. each of licorice and marshmallow root; boil in 3 pints of water down to a quart. Allow it to stand to settle; then strain through muslin. It is a very desirable drink in colds, etc.

Slippery Elm Tea.—Boil 1 oz. in a quart of water until $\frac{1}{4}$ has boiled away. Pour off, and flavor with lemon juice if desired. Useful in same cases as the former.

Rennet Whey.—Infuse a piece of the rennet in a little boiling water, as for making cheese; let it remain 1 or 2 hours; put a tablespoon of this fluid into 3 pints of new milk, just warmed (not hot). Cover it with a cloth and let stand *still* until the curd is formed thick on the top; press out, and use the whey.

Wine Whey.—Add to a pint of milk, brought to the boiling point, sufficient madeira or sherry wine to coagulate it. Strain, sweeten or flavor to the taste.

Rice and Milk.—Wash 3 tablespoons of rice; put in a sauce-pan with a pint of milk; allow to simmer until rice is soft, stirring from time to time to prevent burning; sweeten and flavor to taste. This is a nice dish for children, especially when troubled with summer complaint.

Tapioca, Macaroni, Vermicelli, etc., may be treated in the same way. They make very palatable dishes.

Swiss Cream.—Boil a pint of cream or milk with a little cinnamon or lemon peel; rub a teaspoon of flour in a small quantity of milk, and add it to the rest, stirring it on the fire.

Asses' Milk.—This is much like human milk in consistency, but contains a little less cream and more soft caseous matter. It is often used by persons afflicted by lung affections, and is considered very strengthening.

Artificial asses' milk may be made by dissolving 2 oz. of sugar of milk in 1 pint of warm, skimmed, cow's milk. Another recipe for artificial asses' milk is $\frac{1}{2}$ oz. of gelatine dissolved in a quart of hot barley water, then add 1 oz. of refined sugar, and then 1 pint of new cow's milk and beat all together.

Goat's Milk.—This is considered very good for invalids in some conditions. It resembles cow's milk, but the butter contained in it is harder than that of the cow.

Artificial goat's milk is made by taking a piece of fresh calf's suet the size of an egg, tying it in a cloth, scalding it in a quart of new milk, and adding a level tablespoon of granulated sugar. The suet must be cut finely, or chopped, and tied loosely in a thin piece of muslin or lace. This is excellent for scrofulous children, and any person suffering from affections of the lungs.

Frangipane.—This is a preparation for invalids made by evaporating to a thick consistency (in a double boiler) milk mixed with blanched and pounded sweet almonds, and a little sugar.

Suet and Milk.—To 1 pint of new milk add 1 cup of scraped veal suet and a teaspoon of sugar. Scald together for an hour, then strain, and add a little flavoring if liked. This is a nourishing drink for an invalid or delicate child.

Arrowroot.—Mix 2 teaspoons of arrowroot with 1 tablespoon of cold water,

then add $\frac{1}{2}$ pint of boiling milk and boil 10 minutes. Sweeten to taste and add nutmeg or powdered cinnamon. It is light and agreeable for a delicate stomach.

ARROWROOT.—This is a species of starch obtained from the roots of a variety of plants cultivated chiefly in the West Indies. The origin of the name is said to be the use by the Indians of the fresh roots to cure the wounds caused by poisoned arrows.

Any kind of starch to be digestible should boil 10 to 20 minutes. It is not enough to cook it until it swells, but it must be cooked until the starch granules burst their sheaths. Starch preparations are often cooked too little.

Gruel.—*Corn-starch, Rice, Wheat Flour or Arrowroot.*—Wet 2 teaspoons of the flour in cold water or milk, stir into 1 cup of boiling water, add 1 saltspoon of salt, boil 10 to 15 minutes; thin it with $\frac{1}{2}$ cup of milk.

Barley Gruel.—Wash $\frac{1}{2}$ cup of pearl barley and boil it in 1 pint of water for 20 minutes; pour off this water and add 1 quart of fresh boiling water; let it boil until reduced $\frac{1}{2}$; strain, and add the rind of a lemon and sweeten to taste.

Codfish Gruel.—Fresken a tablespoon of shredded codfish to taste; add to it 1 teaspoon sifted flour, and 1 cup of boiling water—allowing it to simmer long enough to thoroughly cook the flour; add a very little butter, and eat with toasted cracker.

Cornmeal or Oatmeal Gruel.—Mix $\frac{1}{2}$ cup of the meal with a little cold water; then add a pint of boiling water, a teaspoon of salt, and boil 25 or 30 minutes. Sweeten to taste, and add a little nutmeg. This makes a nice light nourishment for the sick or convalescent.

Cracker Gruel.—To 4 tablespoons of powdered cracker, wet with boiling water, add 2 cups of hot milk.

Egg Gruel.—Beat well 1 egg, white and yolk separately; pour 1 cup of boiling water or milk to the yolk, add 1 teaspoon of sugar; mix well, and stir in the white.

Onion Gruel.—Slice and cut finely 2 or 3 small onions; stew them in a quart of water until they are soft; then add a teaspoon of good extract of beef. This is excellent for a cold. Or the onions may be stewed in milk instead of water, and a sprinkle of oatmeal and a pinch of pepper stirred in, instead of the meat extract if preferred. Take it just before getting into bed.

Milk Porridge.—Boil 24 raisins cut in quarters, in water enough to cover them, 20 minutes; when plump, and the water has evaporated, add 2 cups of milk, and when boiling add 1 teaspoon of flour rubbed to a paste; let it boil up, then with a little cold milk add the white of an egg well beaten.

Oatmeal Jelly or Stiff Porridge.—Keep a pint of water boiling, and while it is still on the fire, stir in small quantities of oatmeal very fast, sprinkling it in, until it is rather thick; then boil it slowly $\frac{1}{2}$ hour. Turn it out into a soup plate, and eat it with milk, or syrup, or butter and salt.

Elm Jelly.—To 1 quart of water add 4 tablespoons chipped slippery elm, and let it stand over night. In the morning strain off the water, add 1 or 2 slices of lemon (without seeds), sweeten, and let it boil for 10 minutes. Remove the lemon, and pour it into a mold to cool and harden.

Rice Jelly.—Make a thin paste of 2 oz. of rice flour and 3 oz. of loaf sugar; boil them in a quart of water till transparent. Flavor with rose, orange, or cinnamon water. It can be made also by boiling whole rice long and slowly. A pinch of salt improves it.

Tapioca Jelly.—Choose the largest sort, pour on cold water to wash it 2 or 3 times, then soak it in fresh water 5 or 6 hours, and simmer it in the same until it becomes clear, adding the peel of 1 lemon; then add sugar, and lemon juice. It thickens very much. Wine is also sometimes added for invalids.

Restorative Jelly.—Use 1 box of gelatine, 1 tablespoon of powdered gum arabic,

$\frac{1}{2}$ pint of port wine, juice of $\frac{1}{2}$ a lemon, 3 tablespoons of sugar, and 3 whole cloves; put all in a covered glass jar, set on a plate in a kettle of cold water, let it soak $\frac{1}{2}$ hour, put it on the fire, and heat slowly; when all is dissolved, stir well, and strain into a shallow dish, and cut in squares.

Wine Jelly.—Use $\frac{1}{2}$ cup of gelatine; soak soft in $\frac{1}{2}$ cup of cold water; then pour in 1 pint of boiling water, juice of 1 lemon, 1 cup of sugar, 1 cup of sherry wine; stir and strain through a cloth into a mold.

Milk or Cream Toast.—Toast a slice of bread uniformly brown. Break the crust by rolling, and add sufficient hot milk or cream to thoroughly soak it. Sweeten with powdered sugar.

Sippets.—When the stomach cannot bear meat, toast some slices of bread, lay them on a hot plate, and pour hot meat gravy over them; add salt to taste.

Boiled or Baked Flour.—Tie some flour in a cloth as if it were a pudding, put it in boiling water and boil for 3 hours; then scrape down the inner part of the ball, and use a tablespoon in a pint of milk to make a gruel. Or put the flour on a tin in the oven and bake it till it is a light brown; then use as before. Both these preparations are more digestible than uncooked flour.

Cracker Panada.—Pour over 3 or 4 crackers in a sauce-pan enough water to barely cover them. Boil 2 or 3 minutes. Pour off the surplus water, and add enough hot milk or cream to soak them. Sweeten with powdered sugar.

Iceland Moss.—Wash 1 oz. in boiling water; then boil slowly in a pint of water until quite soft. Strain through cloth, and sweeten. When done it will make a very palatable dish.

ICELAND MOSS.—This is really a lichen not a moss. It grows in northern latitudes. Its bitter taste is due to an acid it contains, but by soaking it in a weak solution of carbonate of soda, that can be removed. It contains about 10 per cent of water; 9 of albumenoids; 70 of lichen starch; 6 of lichen acids; $3\frac{1}{2}$ of cellulose, and $1\frac{1}{2}$ of mineral matter.

IRISH MOSS is a seaweed, collected mostly on the coasts of Ireland. Its chief constituent is a kind of mucilage which dissolves to a stiff paste in boiling water; it also contains a little iodine and much sulphur. Its constituents are, water 19%; albumenoids 9; mucilage, etc., 56; mineral matter 14. It should be soaked in cold water for an hour or so before being boiled in water or milk. It will often relieve a severe cough, and is frequently given in cases of rheumatism and gout.

Arrowroot Blanc Mange.—Mix arrowroot in the usual way, but use 3 times more than you would for gruel; add milk and flavoring; sweeten to taste and simmer till thick enough for a mold.

Rice Blanc Mange.—Boil as much ground rice in a pint of milk as will make it thick enough to turn out of a mold, sweetening and flavoring to taste. A sauce can be added of milk, cream, or any invalid custard.

Sago Blanc Mange is made the same way, first washing the sago in several waters.

Tapioca Blanc Mange is made the same way, washing the tapioca, and using less of it.

Taganrok Blanc Mange.—Put 2 cups milk in a double boiler, bring it to a boil, and sprinkle in 2 tablespoons taganrok farina, stirring all the time; add $\frac{1}{2}$ teaspoon salt, and cook 30 minutes, stirring often; then turn into a mold which has been wet with cold water; let cool, and serve ice cold with cream and sugar. (Taganrok is Russian wheat farina. It can be bought in small packages at the stores.)

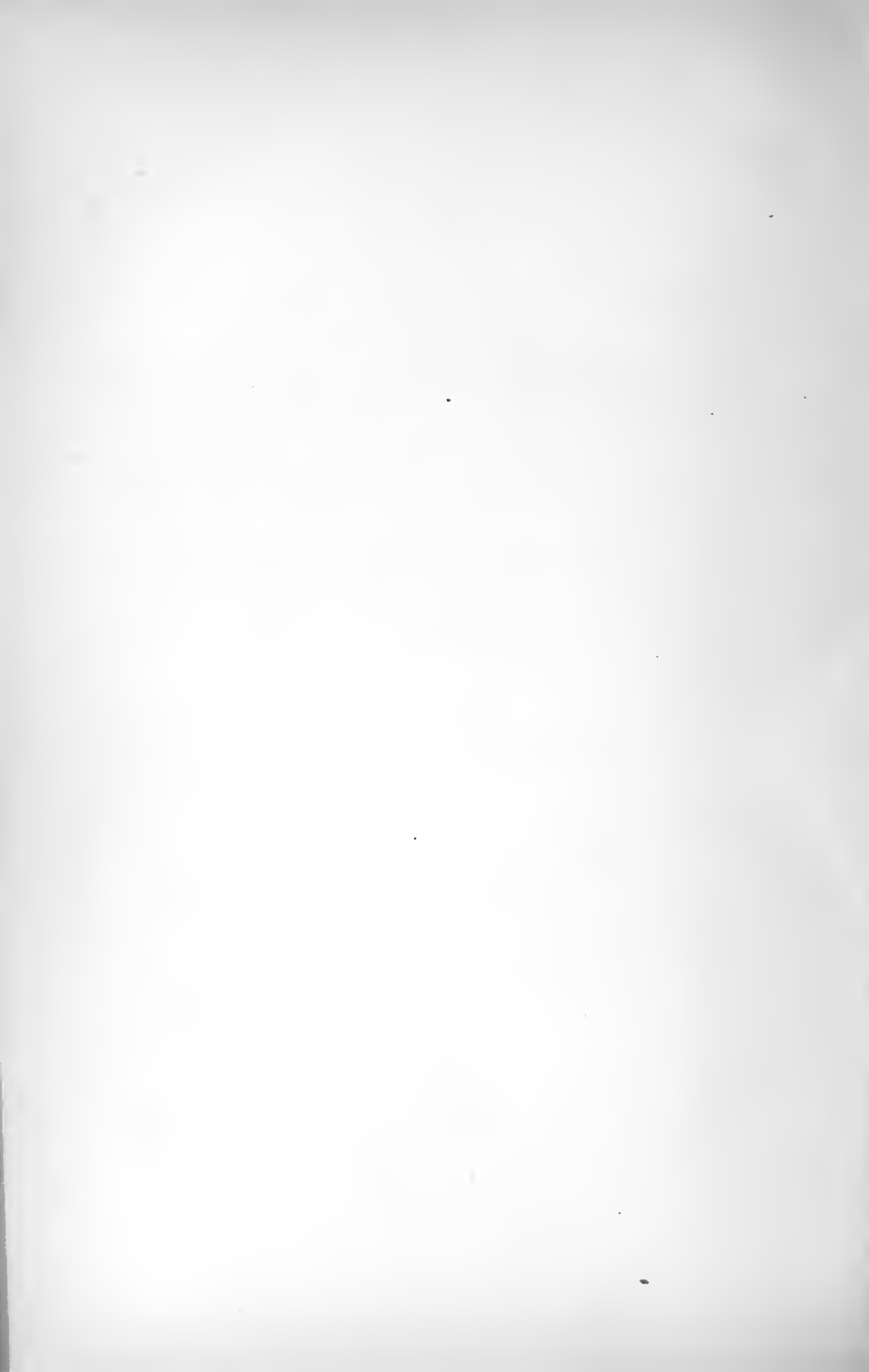
A Delicate Dish for Invalids.—Heat 1 pint of rich milk to boiling, stir in 3 tablespoons of ceresine; beat up the white of an egg and put in while hot; add a little salt, and a teaspoon of sugar, or leave out the sugar if preferred without; add a little pepper.

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FOREIGN COOKERY.

A brief glance at the cookery of other nations may be of interest to our readers. Those who are fond of trying experiments may be glad to try some of the foreign dishes. Owing to our limited space we can give only a few recipes—not as many as we are tempted to do, but a good many foreign recipes of various kinds will be found scattered through our pages, in addition to those which we give here.

English Cookery.—English cookery resembles the American more than that of any other nation. The cooking of meat is much the same in the two countries, but in America meat is so plentiful that much more is wasted, in fact, probably no other nation wastes as much food of any kind as the American. It is a national characteristic which often impresses foreigners. The varieties of fish, fruit and vegetables eaten in the two countries vary slightly, although in the main they are similar, and so is the method of cooking them. It is unnecessary to give recipes here, as so many English recipes are given in the body of our work, and the cookery of the two countries is so similar that they would present little novelty, or contrast to our readers. It will be better to devote our limited space to other countries.

FRENCH COOKERY.

The French are justly proud of their cookery which ranks very high, perhaps higher than that of any other nation. Garlic is very generally used in flavoring French dishes, so much being often used as to render them quite unpalatable to the unaccustomed taste, but in delicate cooking its presence is hardly noticed. Much importance is attached to a good dish of fish. In a country like France where the church prescribes as a panacea a *maigre* fare twice a week (though it is generally observed only on Fridays) this attention to the preparation of fish is quite natural.

In cooking meats the French disguise or cover the taste in various ways, while the English and American system retains the original flavor more generally. The French say that their Anglican cousins eat their meat raw, while, on the other hand, we think they lose much of the rich flavor of the meat by so uniformly disguising it. Possibly, however, the conditions of the different countries regulate these matters largely, for while with the best meat much is gained by retaining its flavor, with inferior qualities more is gained by masking it, and probably the quality of the meat is generally better in England and America than in France. The very general custom of making soups and stews, draws out of the meat its salts and extractives, and leaves the fibrin and other ingredients insipid and unpalatable. These remnants of meat, however, contain elements of food essential to the system, and by the use of sauces and flavorings they are made very palatable and attractive by the French.

Much bread is baked in country houses, and large flat, plain cakes, called *galettes*, composed principally of flour and water, (the butter being conspicuous by its absence) are universal. The smaller cakes are delightful. Vanilla is the most popular flavoring. Delicate little puffs made in soft, flaky rolls, are filled with preserves of various kinds, but the vanilla flavor is traceable in most of them.

There is a sort of national jam, called *raisinet*. It is very common with the middle classes, and is used for cakes, and for eating with bread and butter. Its foundation is the new wine as it comes from the press, and into this are thrown turnips, carrots, plums, apples, pears or any other fruit that may be in season, and it is kept stirring for 24 hours. No sugar is added, but the process of long boiling is sufficient to make it keep for a whole year. Fruit syrups are a great feature in France. Raspberries, strawberries, currants, apples, apricots and every sort of fruit is utilized. These syrups are used for sauces, as well as mixed with water for drinks, and grateful indeed are these cooling beverages in the sultry days of a French summer.

But the French especially excel in their *entrees* or made dishes, and there is something both artistic and scientific in the refinement of taste which they display in their various combinations of mushrooms, truffles, and other garnitures and seasonings. A great delicacy made by these people is the airy *vol-au-vent*. Everything is converted into a *vol-au-vent*. Meat of all descriptions cut up small in a delicate sauce; in like manner fricasseed fowl, fish stewed in wine, and game dressed in savory fashion find a place in this flaky receptacle. As a sweet, also, it is much favored, fruit and preserves often making their appearance when the top is removed. The *pates* of France may be regarded as the equivalent of the German *wurst*, and there is a great variety in their seasoning and in the different kinds of meat employed in their fabrication. In *bon-bons*, however, no people can equal the French in the variety and excellence of their production, and probably no other people are so fond of sweetmeats. Children, especially, are surfeited with them, so that it is probably detrimental to their health. Other nations do well not to imitate them in this regard.

The economy of French cooks is very noticeable. Everything in the way of food is utilized. Among the poorer French people, no matter to what class they belong, there is far less meat consumed than among the same classes here, yet the fare is more dainty, appetizing and varied than ours. In their hands vegetables are not merely accessories, but are made the most attractive of foods. The very poor, however, live on the simplest fare. It is no uncommon thing to see a laboring man or woman, (for women too labor in the fields) making his or her meal on a piece of dry bread and garlic.

We have space to give but few French dishes in this place, but very many most desirable French recipes are given in the body of our work. Their bouillon, bouillabaise, julienne and other soups; their bechamel, matelote, maitre d'hotel and other sauces; their beef a la mode and various other dishes will be found in their appropriate places in our work. Every year sees a more general use of good French recipes by our own people.

Court Bouillon to Boil Fish in.—Take $1\frac{1}{2}$ quarts of water and put into it 3 tablespoons of salt and 1 of pepper seeds; $\frac{1}{2}$ pint cider vinegar; 2 cloves, 2 onions, 2 bay leaves, 1 carrot. Let it come to a boil and then put in the fish.

Macedoin of Vegetables.—In the spring select good fresh vegetables which match well, like asparagus, turnips, carrots, string beans, etc. Cut the asparagus into $1\frac{1}{2}$ inch pieces, the beans into lozenges, and the others into fancy shapes, and cook each kind separately in salted water till tender; then drain them. Put butter into a stewing-pan, and as soon as it melts put in the vegetables and stir them a little over a moderate fire. Use just butter enough to envelope the vegetables, but no more. When well warmed, add enough *bechamel* sauce to moisten them. Then arrange them on a hot dish in the form of a pyramid and serve.

Fillets de Vent.—Take the white of 1 egg and 6 oz. of white sugar; flavor with vanilla and stir together till about as thick as icing. Put little bunches on paper and bake in a slow oven.

Mirotin of Veal.—Take remnants of veal and chop fine, adding some fat bacon if you have it. Take $\frac{1}{3}$ as much bread crumbs as meat, and put it in milk; when well soaked, take out, squeeze dry in a clean cloth, and add it to the meat. Add also 1 egg beaten light, salt, pepper and a slice of onion and a little parsley minced together. Put all together in a sauce-pan, mix thoroughly, and merely warm without cooking. Now take a deep dish, butter it well, put in the mixture, and bake in a quick oven. Turn it out whole, and serve with caper sauce.

Ramequins.—In a *gratin* dish, put 1 tablespoon of melted butter; now put in a layer of thin slices of bread, and cover it with cheese in thin slices. Next take 1 cup milk, stir in 3 eggs, and pour over all. Put in the oven and bake till the top is light brown, which should be in 15 minutes. Delicious.

GERMAN COOKERY.

The Germans possess good appetites and are highly critical in the matter of cooking. Perhaps the greatest difference between the German cooking and our own consists in their greater use of seasoning, principally fresh and dried herbs of all kinds. Many dishes which we look upon as ready for the table they would regard as only half prepared. Certainly the Germans take a great deal of pains in the preparation of all kinds of meat. Joints to be roasted, after having been wiped and deprived of all superfluous fat, gristle, or any unsightly scraps, are thoroughly rubbed with a mixture of herbs, selected according to the different nature of the meat to be dressed. Then onion, allspice, pepper and salt, and occasionally cloves, are placed in the pan and the joint is basted frequently with the gravy thus flavored, all of which adds a refined and delicate flavor to its taste.

Their manner of cooking vegetables is more artistic than our own. A delicate savoy cabbage with which we would be satisfied when thoroughly boiled in salt and water, would not seem so perfect were we to taste a similar cabbage after a German handling, with the addition of shalot delicately fried in clarified butter, pepper, parsley, and just a touch of flour. German cooks are scrupulously attentive to washing their vegetables, and consume large quantities of water in the process.

The excellence of German bakers is well known, for they are to be found scattered all over our own country, and most of us are familiar with the varieties of brown and white bread which they make, as well as rolls of every description. The German families buy their bread very largely at the baker's instead of making it at home. The cakes, however, every family makes, or can make themselves; plain or rich cakes, bread tarts, and foam tarts (the foam being a combination of eggs and sifted sugar) as well as open tarts, not made with preserves as ours are, but of the lightest dough rolled out and cut into long or round shapes and thickly overlaid with fresh fruit, sprinkled with sugar and currants, the juice permeating the crust and none of it being lost, thus giving a rich flavor to the tart. Stewed fruit is frequently used at German tables as a substitute for a second vegetable. With roast pork, for example, a large basin of stewed plums generally makes its appearance, instead of the side-dish of apple sauce to which we treat it. Apple compote is served in the same way with roast veal or fowl. Ducks, geese and turkeys are usually stuffed with chestnuts and spices.

The knowledge of cookery runs through all classes, and is an essential part of a girl's education. The great majority of families belonging to the middle classes in Germany live in flats, even those who may be termed wealthy. The daughters, even in the highest class, take their turn, week about, in superintending the management of the house, thus learning housekeeping and cooking from earliest youth.

Bretzeln.—Mix 1 large tablespoon yeast into $\frac{1}{2}$ pint warm milk; stir it into $1\frac{1}{2}$ lbs. of flour, and beat it well. In another pan beat $\frac{1}{2}$ lb. butter to cream; add to this 2 oz. sifted sugar, 3 eggs, another tablespoon of yeast, and a little salt. Put the dough into this, and beat all together thoroughly till quite smooth; cut off pieces the size of an egg, roll them into round bars 6 to 8 inches long, and tapering off at the ends. Lay them on buttered tins, curving them in half circles or new moon shapes; leaving space between each. Put them by gentle warmth to rise; when light, brush them over with egg, dust sugar over, and bake them a pale brown.

Chickens (Ordinary German Way).—Stuff 2 chickens with a stuffing made of French rolls; a little butter, 1 egg, 1 onion finely shredded; parsley, thyme and grated lemon peel. Next lard and bread crumb them, placing a piece of fat over the breast that they may not become too brown. Place the chickens in a stew-pan with 1 oz. butter; leave uncovered for a short time, then cover and bake for $1\frac{1}{2}$ hours. Half an hour before serving add 1 small cup of cream, and baste thoroughly over a hotter fire.

Dicke Milch.—This is new milk put into a pie dish or other shallow vessel and

allowed to stand 2 or 3 days, according to the weather, until it is sour and thick, but not quite so thick as blanc mange. Only experience can guide one as to the exact stage at which it is ready to use. If left too long a watery fluid rises to the top. It is eaten with bread crumbs and sugar.

Frothed Milk Soup.—Pound 6 bitter almonds, and boil them in 2 quarts milk, or instead of the almonds use $\frac{1}{2}$ a stick of vanilla; add sugar to taste and a little salt. Beat separately 4 eggs; the whites must be beaten to a stiff froth, then mixed with the yolks. Let the milk just cease boiling, and whisk in the eggs till it froths well, but not over the fire or the eggs will curdle. Serve with small sponge biscuit.

Grutze.—Boil 2 lbs. red currants and $\frac{1}{2}$ lb. raspberries, in $1\frac{1}{2}$ pints water; when quite soft pass through a sieve. Make this juice boil, and add $\frac{3}{4}$ lb. sago well soaked in water; let it boil $\frac{1}{4}$ hour, stirring it all the time. Wet a mold with cold water, pour in, and when cold turn it out. To be eaten with milk, cream or custard. Any other fruit or preserve will do as well.

Gulasch.—Cut a tender piece of steak into quite small pieces, lay them in a deep frying pan, with a little bacon, some slices of onion, and a little pepper and salt; fry them in butter till the gravy looks brown; then add a little lemon juice and a small quantity of water. Cover the pan, and let the contents simmer till the meat is quite done.

Knodeln.—Mash 3 or 4 large potatoes smoothly with 1 large tablespoon of flour, and mix with 1 well-beaten egg; make into balls the size of a walnut, and boil. These are served with meat in the place of other vegetables. They can also be baked.

Koche (Molds).—We have no suitable term for this sort of a dish in English. Sponge pudding is the nearest, but this does not do it justice; nor is custard right. We must therefore call it mold.

Chocolate Mold.—Whip 2 oz. of butter with 2 oz. of sugar, the yolks of 3 eggs, and 3 oz. of grated chocolate; mix in the 3 whites whisked to a stiff snow; bake in a buttered mold.

Potato Mold.—Whisk 3 eggs with 2 oz. of sugar and a little grated lemon peel; then stir in a pint of cream and enough grated cold potatoes to form a very thick batter, which must be so stiff that it will not drop from the spoon. Bake in a well-buttered mold.

Egg Mold.—Use 4 oz. of butter, 4 oz. of sugar, the yolks of 8 eggs, the grated peel and juice of $\frac{1}{2}$ lemon, and a tablespoon of flour; whip them to a foam; then stir in the whites of 4 eggs in a stiff snow. Bake it in a buttered form or dish.

Neum-loth Pudding.—This favorite pudding is made as follows: Stir $\frac{1}{2}$ pint of milk into $4\frac{1}{2}$ oz. fine flour and $4\frac{1}{2}$ oz. powdered loaf sugar. Put $4\frac{1}{2}$ oz. butter and $\frac{1}{2}$ pint of milk into a stewpan, and when this is hot and the butter is melted, stir in the other milk and flour; keep the mixture stirred over the fire till it boils and thickens; then turn it out into a pan to cool. Stir in the yolks of 9 eggs and $4\frac{1}{2}$ oz. almonds blanched and pounded, and lastly the 9 egg whites, beaten to a stiff snow. Stir all briskly together, butter a mold or basin, fill it, and boil the pudding $1\frac{1}{2}$ hours. The water must not cease boiling. Serve with a good sauce.

Nudels.—Beat 2 eggs, work into them by degrees as much flour as they will take, and knead them into a smooth stiff paste. Cut into 4 or 6 parts, make into balls, and roll out as thin as paper, and spread it on a napkin in the sun or near the fire to dry; it dries quickly. Then cut into quarters, lay the pieces on top of each other, and cut into strips as narrow as twine. Dry them well and they will

keep some time. They can be made white by using only the whites of the eggs and flour. Keep the board well floured while rolling them. They are used much like the Italian maccaroni. A common way is to drop them into boiling water well salted; they will cook in about 5 minutes; pour browned butter on them when they are served, and add a little grated cheese if desired.

Sauerbraten.—This is one of the great national dishes. Lay a piece of beef in a deep dish and pour a cup of vinegar over it. Leave it in this 2 to 4 days, turning and basting it every day. To prepare for cooking wipe it dry; cut strips of fat bacon the size of a little finger; roll them in a mixed seasoning of salt, pepper and ground cloves. Make holes in the meat, and with a large skewer put in the pieces of bacon. Make butter hot in an iron pot or stewpan, just large enough to hold it; put in the beef and set it over a brisk fire, letting the steam escape to hasten the browning; dredge it with flour, and turn it when one side is brown. When the meat is nicely colored add about 1 pint of water; 2 carrots quartered lengthwise; 1 or 2 large onions sliced; 2 or 3 bay leaves; 1 teaspoon of whole pepper; a blade of mace; $\frac{1}{4}$ of a lemon peel; and a good sprinkling of salt. Cover closely, and let it steam 2 or 3 hours, adding a little water when necessary. At serving time take up the meat and keep it hot while you skim off the fat and strain the gravy. The unbroken carrots may be laid around the meat. Add lemon juice or vinegar if the sauce requires more acid; thicken it with flour, give it a boil up, pour a little over the meat, and serve the rest in a sauceboat.

Sticklerspersgröd.—For this simple and cheap dish, well flavored, ripe red gooseberries are used. Take 4 lbs. gooseberries with $\frac{1}{2}$ lb. raspberries, keep them stirred gently in a stewpan over a clear fire till the fruit is quite soft, then mash and strain the juice through a cloth. Make this juice quite boil; then add $\frac{1}{2}$ lb. sugar and 6 oz. corn flour or arrowroot; let it boil 10 minutes, stirring all the time. Wet a mold with cold water, pour it in, and when cold turn it out. The best proportion is 1 pint juice to $\frac{1}{4}$ lb. corn flour. To be eaten in soup plates with sifted sugar and milk.

Sauerkraut is given in our article on "Vegetables."

ITALIAN COOKERY.

Italian cooking has a general resemblance to the French. In fact there is more or less resemblance in the cooking of all the Latin races. Their soups are endless in variety, and are sometimes prepared with vegetables and sometimes without. A dish which may almost be called national, so general is its use, is the *Minestrone*, or large, thick soup. It consists of vegetables stewed together for many hours, thickened with rice and a strip of bacon added. Macaroni is absent, but Parmesan cheese is plentifully added. Joints of meat are cut smaller than with us, but they are quite commonly garnished with olives, and so are their ragouts and stews. The Italians have a most delicate way of preparing cutlets, and veal cutlets are in especial favor. Sausage making is carried to a high degree of excellence, and there are some varieties (like the Bologna) which are well known abroad.

Italian bread is light and pleasant to the taste, and many kinds of rolls and cakes are artistically shaped. *Ricotta*, as well as macaroni, and *Risotto*, a rice pudding, may be called a national dish, as it makes its appearance almost daily on Italian tables. Although possessing fruit in abundance their syrups are inferior to those of France, and hence, doubtless, are little used, but the use of lemonade as a beverage is universal. In the manufacture of ices they certainly excel, and in the variety and excellence of their bon-bons they nearly equal the French. A great deal of fruit is consumed, and no country is richer in its productions of this kind. Oil is very generally used in their cooking now, as in olden

times, taking the place of butter used in English and American cooking, and of course this affects the flavor of many dishes.

Bracciolette.—Take a fillet of beef, remove all fat and gristle, and mince it finely, mixing with it salt, 1 or 2 cloves (powdered), and a little oil and chopped fat bacon, sweet herbs and parsley to taste. When well amalgamated roll it out, and divide into small pieces; form each into a ball, roll them in liquified butter, and then in fine bread crumbs. Just before they are wanted, broil them on a good fire, first on one side, then on the other, if done too long they will be spoiled.

Crocante.—Take $\frac{1}{2}$ lb. finely chopped (and blanched) sweet almonds; $\frac{1}{2}$ lb. loaf sugar; 1 tablespoon essence of lemon, a piece of butter the size of a walnut; boil in a sauce-pan till it browns (15 to 20 minutes); turn into a flat, buttered pan and cut when cold into small pieces, eating cold.

Gniocchi of Semolina.—Take 1 lb. good semolina and 1 pint milk. Put the milk, with an equal quantity of water, on the fire, and before it reaches the boiling point sprinkle in the semolina; then let it boil, stirring all the time. When sufficiently cooked turn it out on the pasteboard, which should be previously sprinkled with cold water. When cold, cut the paste into pieces the size of a walnut. Put them on a dish, season them well with grated Parmesan cheese, sugar and cinnamon, and add butter. Put them in the Dutch oven and bake 1 hour before serving.

Minestra.—Cut up 3 or 4 potatoes, add a proportionate quantity of beans (dried ones are best), onions, carrots, and celery sliced, and if in season sliced vegetable marrow and pumpkin rind. Boil all these in $\frac{1}{4}$ sauce-pan of water till the potatoes are quite soft, adding salt. Then add $\frac{1}{4}$ lb. rice or macaroni; boil a little longer, as the rice ought not to be soft, and before taking off the fire add 1 oz. butter (a spoonful of olive oil is orthodox), and as much Parmesan cheese; stir a few moments and serve. Grated cheese may with advantage be added afterwards.

Ricotta.—Strain 1 gallon of fresh whey into a flat copper pan, put it on a gentle fire, and as soon as a kind of froth begins to rise on it add 1 quart of milk, and stir the mixture lightly with a stick until a thick froth rises all over the surface; gather this froth with a spoon, and put it to drain in a very fine tin colander, and the ricotta is made. Carefully avoid letting the milk and whey come to a boil at any time during the process.

Risotto.—Take $\frac{1}{4}$ lb. rice, and boil it with sufficient salt in a little more water than will cover it, till the rice begins to swell; it must not get too soft. Then add a pinch of saffron, just to color it, or, if possible, 1 tablespoon of tomato sauce; also about 1 oz. butter, and as much grated Parmesan cheese; stir for a few minutes, and serve. This is for 4 people.

Polenta with Gravy.—Into $1\frac{1}{2}$ gallons of water put 1 teaspoon salt, and when it boils stir in gradually, stirring all the time, 1 tablespoon butter and 2 cups semoule or coarse cornmeal; boil 20 minutes. Then put a layer of the polenta in a dish, cover with tomato sauce and good gravy (having a cup of each hot and ready) and sprinkle with grated cheese. Put it into the dish in alternate layers in this way, and serve hot.

SPANISH COOKERY.

In Spain the inhabitants subsist mainly on maize and rice, with some wheat and legumes, among them the garbanzo or "chick pea." There is little butter

used, the universal substitute being olive oil, which is produced in great quantities. Fowls and the pig furnish the chief animal food, and garlic is the favorite condiment. Fruit is fine and abundant; especially so are grapes, figs and melons. Several Spanish recipes appear elsewhere in our work.

Olla Podrida.—First and foremost among soups comes the far-famed olla podrida, which is so supremely dear to the national heart. It is made as follows: Spread a little butter over the bottom of a 4-quart sized kettle or stewpan; upon this lay 4 onions cut in slices, and then 4 lbs. of gravy-beef cut in thick slices, and $\frac{1}{2}$ lb. raw ham or lean bacon, an old partridge or pheasant; add 2 carrots, celery and parsley roots, a bay leaf, thyme, and a clove of garlic tied up tightly, 6 cloves, and a bit of mace; moisten with a quart of water or stock, and boil down to a glaze, or until it begins to fry; fill up then with water or stock and simmer gently 2 hours; strain into the soup-pot containing carrots, turnips, celery and leeks, all cut fine. Then add a pint of *garbanzos* (Spanish peas), previously soaked and boiled, and a dessertspoon of Spanish sweet red peppers chopped fine; boil gently until the vegetables are done. Have the meat cut in small pieces in the tureen, pour the hot soup over it, and serve with bread. This of itself forms an excellent dinner.

Ajo Blanco.—This soup is extensively used in Andalusia. Pound 1 clove of garlic and 7 well-dried beans (or, better still, almonds), in a small spice mortar to a smooth paste. Moisten this paste with olive oil, drop by drop, then add water by degrees so as to thoroughly incorporate and amalgamate the whole; add until it is sufficiently wet to soak some bread, which must be added later on, pouring in some vinegar and a little salt. Then put in the bread crumbs, size of half an almond, and allow it to soak. A final mixing of the bowl, and this quaint and perfectly national dish awaits consumption.

Bacalao.—In this land of rigid Catholicism, bacalao or salted cod, is almost indispensable on the many fast days in the calendar. Cut up the cod after it has been soaked 24 hours, and lay the pieces so as to cover the bottom of a small earthen jar; pour on this a thick stratum of grated bread, with garlic and parsley in profusion; then more codfish, then bread again, and so on till the jar is full to the top. Fill all the crevices with raw oil, garlic, pepper and salt. Close the jar and boil till the contents are nearly dry; then serve. Codfish with honey or sugar may be eaten by boiling the pieces, draining them dry, then soaking in honey, flouring, and then frying; or the pieces may be covered with yolk of egg, floured, and covered over with sugar; then fry.

Carbonada.—Cut cold roast mutton or beef into pieces about 1 inch square, and also about equal amounts of squash and cold potatoes; take also 2 or 3 ears of corn and a few string beans; put 1 tablespoon of lard into a pot, 1 onion chopped fine, then the squash, then 2 ripe tomatoes skinned and squeezed, and 1 red pepper with the seeds removed, then the other vegetables; cover with boiling water and stew 30 minutes; put in the meat and stew 30 minutes more; salt to taste. Ten minutes before serving put in the corn cut in small pieces.

Frijoles.—Cook pink beans until soft, in boiling water; drain, and mix in finely chopped onions, and a little of the water in which the beans were cooked; add salt and fry a light brown in smoking hot fat.

Otamo.—Slice equal amounts of onions and green tomatoes, and add a little bell peppers. Put fresh drippings and a little hot water into a hot skillet, add the vegetables and cook 1 hour, keeping closely covered, but stirring often. Serve hot.

Red Pepper Sauce.—Carefully remove the seeds from 2 sweet red peppers, and boil until tender; then drain, add 1 clove of garlic, and rub to a paste, adding a little water if necessary; then heat $\frac{1}{2}$ cup sweet oil, stir in the paste, season with vinegar and salt, after removing from the fire, and serve.

JEWISH COOKERY.

Jewish cookery is becoming much like that of their Christian neighbors, as, except among the more denominationally strict, the old restrictions are melting away, and they often employ Christian servants. From having been forbidden to use butter with meat, oil enters more largely into their cookery of both meat and vegetables. Their fish fried in oil, and so cooked that it can be eaten cold or hot, enjoys a deservedly high reputation. As the Mosaic law forbids the use of any flesh as food which is not free from "spot or blemish," the meat supplied by the Jewish butchers is of the best quality.

Amnastich.—Stew gently 1 pint of rice in 1 quart of strong gravy till it begins to swell; then add an onion stuck with cloves, a bunch of sweet herbs, a chicken stuffed with forcemeat; let it stew with the rice till thoroughly done, then take it up and stir into the rice the yolks of 4 eggs and the juice of a lemon; serve the fowl in the same dish with the rice, which should be colored to a fine yellow with saffron.

Matso Cakes.—Make a stiff paste with biscuit powder and milk and water; add a little butter, the yolk of an egg, and a little white sugar; cut into pieces, and mold with the hand, and bake in a brisk oven. These cakes should not be too thin.

Passover Pudding.—Mix equal quantities of biscuit powder and shredded suet, half as much currants and raisins, a little spice and sugar, with 1 oz. candied peels, and 5 well-beaten eggs; make them into a stiff batter, and boil well, and serve with a sweet sauce. This pudding is excellent baked in a pudding tin. It must be turned out when served.

TURKISH COOKERY.

Cerketal.—Remains of fowls may be stewed with an onion, pepper, salt, and a little water. Wash and bruise 6 walnuts, and mix them in some of the gravy, adding a small quantity of cayenne pepper, and serve this as a sauce.

Dolmas.—Chop some mutton or beef very finely, with a little of the fat; add an onion, pepper, salt, and a little boiled rice, and mix it all together. Then take some cabbage leaves and put them into boiling water for 1 or 2 minutes, and then roll the meat into them like small sausages; then stew them in a little broth or water, with a small piece of butter in it.

Pilau.—Well wash 6 oz. of East Indian rice, and boil it in a pint of water for 5 minutes at the most; then throw it into a colander that it may thoroughly drain. Next place it in a stewpan with 1 oz. butter, salt and pepper to taste, stirring well, and add by degrees about $\frac{1}{2}$ pint of good fowl broth. After 15 or 20 minutes it should be perfectly done and turn out with the grains separate. It is to be served perfectly hot. The foregoing is a true pilau, but additions may be made of portions of the meat of the fowl; of thin slices of bacon, curry powder, chutney, fried onions, mushrooms, tomatoes, etc., but in none of these forms would it be regarded as the true Oriental dish.

RUSSIAN COOKERY.

The Russian people during the great fasts (which last 4 to 7 weeks, and which recur 4 times during the year) sustain themselves mainly on soup made with the bitter cabbages, and a handful of dry salted fish called *sniedky*. It is clean tasted, but one must be a lover of this fish to relish it. Like many other northern nations the Russians are fond of a subacid flavor in their food. Many of their soups are thus flavored, and where they are not, a very common thing is for a dish of sour cream to be at hand with which the consumer gives his food the degree of acidity which suits his palate, a spoonful or two being enough to convert an excellent dish of soup into what many would consider a sour and unpalatable mess. The most characteristic national food in Russia, and the daily food of the mass of the people, is *shchi*. It is made as follows:

Shchi.—At the beginning of winter chop cabbage into shreds and put it into a barrel with vinegar and salt. It becomes a kind of sauerkraut when a certain amount of fermentation has taken place. It must be watched, because if the fermentation goes too far it acquires a high and disagreeable flavor. A portion of this is taken (almost daily) and boiled with meat to a kind of broth, which is the *shchi*. By adding different flavors it can be varied indefinitely, and if well made it is excellent. Some of the meat from which it is made is usually served with the broth.

Nalym.—Chop an onion, fry it in 2 spoonfuls fresh butter melted; add 1 spoonful flour; mix, pour in a little water and set it to simmer. When it begins to boil put in 5 or 6 potatoes, cut into pieces, and add salt. Take fish, clean, salt, cut in convenient pieces, add to the former, and let all simmer together; add some barley grits, a little parsley and black pepper. Russians call this nalym, but it is translated *lavaret*, a name familiar to travelers as that of a kind of trout which inhabits the lakes of Switzerland. Russia is especially rich in fresh water fish, but sea fish is little used. *Shchi* is sometimes made with sea fish.

THE ADULTERATION OF FOOD.

Every one knows that it is of the utmost importance to the health and well being of a family that the food which it consumes shall be pure. The adulteration of food has received much attention in recent years, and scientific chemists can now readily detect the various adulterations used in foods. The average housewife cannot, of course, be expected to qualify herself to perform the delicate tests for detecting adulterations which are employed by the scientific analyst, but it is well for her to understand what the principal adulterations are, and there are a few tests which she can easily perform, and which it will often be an advantage for her to know. The following article explains what foods are most often adulterated, what they are adulterated with, and gives such tests as are adapted for those not possessing the delicate apparatus or special knowledge of the scientific chemist.

There are 3 principal ways of adulterating foods. (1) By replacing a superior article or ingredient by an inferior or cheaper substitute. (2) By adding foreign matters capable of giving an appearance of superiority. (3) By adding water to increase the weight, this being often accompanied by incorporating foreign materials which absorb much water, though perhaps otherwise harmless. So extensively are these various forms of adulterations practiced that the United States Department of Agriculture in its official report estimates that 15% of the whole food supply of the country is adulterated, which shows the importance of the subject to the mass of the people.

Bread.—Bread and flour are not often adulterated in the United States, but their adulteration is more common in Europe. The principal adulterations are the use of inferior grains or mashed potatoes, which lessens its nutritive value, and alum which improves the appearance of bread made from inferior flour and enables it to hold much more water. The logwood test is used to detect alum, which consists in soaking crumbs of bread for 6 or 7 minutes in an alcoholic solution of logwood containing an excess of carbonate of ammonia, and then squeezing it; a more or less deep blue color is produced if alum is present.

Tea.—The 4 principal adulterations consist in: (1) Mixing in spent or exhausted leaves which have been redried, gummed, curled, and faced with coloring matter. A most expensive system of this adulteration is practiced in China. (2) Tea is sometimes mixed with the leaves of other trees, like those of the sloe tree, ash tree, elder, beach and willow. (3) Astringents and foreign substances are added designed to increase the apparent strength and quality. (4) Facing is practiced, which consists in using various coloring matters designed to impart some favorite color or gloss to the leaf. Some grocers give what they call "a bloom" to green teas by shaking them up with a little calcined magnesia, or finely powdered French chalk; black teas are faced with finely powdered black lead.

Many of these substances can be detected by simply stirring the tea in a little cold water, when they will become detached and either make the water turbid or sink to the bottom. An inferior article, dyed with sulphate of iron, is often sold for pure green tea; to test it, make an infusion and put in a bit of gall-nut; if pure, the color will not change, but if sulphate of iron is present it will turn a deep black. To test for the presence of the other leaves mentioned above, steep a little tea, and drop in $1\frac{1}{2}$ grains of sulphate of copper or sulphate of iron; if a genuine green tea it will then present a fine blue tint when exposed to a good light; if a genuine black tea, it will turn a dark blue, almost black; if adulterated, yellow, blue, and green colors will appear. Tea when fresh gathered is some-

times dyed with Japan earth, giving it the color of black tea; to test for this, steep a little and add a little sulphate of iron (copperas); if not dyed it will turn nearly a blue black; if dyed it will be a light blue. Also when milk is added, instead of turning a blackish brown it takes a reddish hue. In cheap teas there is often a considerable proportion of mineral matter, i. e. added dirt. It can be detected by chewing a small quantity of the leaf, when dirt will be felt in the mouth. The best teas sometimes have inferior varieties mixed in with them, and the mixture is then sold as the best quality. The adulterations of teas are not, as a rule, detrimental to the health.

Coffee.—The readiest safeguard is to buy only the green berries, and roast and grind them at home; they are less commonly adulterated than the ground coffee, but a machine has been made to press flour, chicory, etc., into the form of coffee berries, so that even this precaution is not an absolute protection. *Ground coffee* is almost *universally* adulterated with chicory, etc., and the chicory is itself often largely mixed with various rubbish, which, by roasting, gives a brown color to water. The presence of adulterants may be readily detected in roasted coffee as follows: Place a spoonful of the roasted berry gently on the surface of a glass of water; if pure, it will float some time, and scarcely color it; if adulterated it will rapidly absorb the water and sink to the bottom of the glass, giving a reddish brown tint as it falls. Or, shake a spoonful of coffee with a wine glass of cold water, and then place the glass on the table; if pure, the coffee will rise to the surface and scarcely color the water; if not, it will sink to the bottom and tinge the water red. To test ground coffee throw a little on cold water; coffee will float, while cereals if present will sink; chicory, if present, will quickly color the water, while coffee will not. Most of the adulterations of coffee are not deleterious.

Cocoa.—This is never sold in the pure state, and no 2 preparations are alike. The only safe way is to buy that which is put up in packages bearing the name of some well-known maker whose preparations are wholesome and adapted to the demands of the palate.

Baking Powders.—The principal adulterations to look out for are alum and ammonia. Alum is injurious to the health. "It unites with the phosphates in the bread, rendering them insoluble, and preventing their absorption and digestion," thus diminishing the nutritive value of the bread. As a test for alum, make a fresh decoction of logwood, dissolve a little of the baking powder in it, and add a little acetic acid; if it turns bluish or purplish red, there is more or less alum, according to the color; if it is yellow there is no alum. To test for ammonia, make a strong solution of the baking powder in water, add a little piece of potassium hydrate, and heat till it steams; if ammonia is present the steam will turn red litmus paper blue. A certain amount of starch is needed in baking powders to keep them dry, but they are sometimes loaded with an excessive amount, and it becomes an adulteration, though not injurious. On dissolving the baking powder in water if the starch is excessive it may form a paste. It may be said without hesitation that *all* of the "cheap" baking powders are adulterated.

Cream of Tartar.—The most common adulteration is with terra alba or gypsum, the amount introduced varying from 5% to 75%. To test, take $\frac{1}{2}$ teaspoonful and pour on 1 cup of hot water; good cream of tartar will almost immediately dissolve, and the water will be almost transparent, but terra alba or gypsum is insoluble in hot water.

Pickles.—The common adulterations of pickles are the use of alum, and color-

ing them highly with copper. The presence of copper, even in very small quantities, may be easily and quickly detected by putting a piece of bright iron or steel, like a knife blade or knitting needle, into the jar of pickles for a short time, when, if copper is present, it will coat the metal. Another evil in cheap pickles is the use of adulterated vinegar.

Vinegar.—This is adulterated with burnt sugar to give it color, and with sulphuric and other acids, generally sulphuric, that being one of the cheapest. To test for the latter, put a few drops of barium chloride in some of the vinegar; it should turn a little cloudy, but if there is a marked precipitate too much sulphuric acid is present. A further risk in vinegar containing sulphuric acid is that the acid has been made from pyrites and is contaminated with arsenic.

Pepper.—Pepper corns may readily be judged by tasting; they cannot easily be replaced by other seeds, but may have been damaged by sea water and retain but little pungency. Ground pepper is often adulterated with mustard husks, roast ship-bread and Indian meal. Their presence may be detected by the microscope, but there is no simpler test adapted to the housewife's use. These adulterations are not injurious to the health, but they reduce the strength of the pepper. The pure article is rarely found in the market in the ground state.

Cayenne Pepper.—This is sometimes adulterated with red lead, vermilion, red ochre, brick dust, turmeric, etc. Pure cayenne pepper when burnt, leaves a very small quantity of white ash; if a red-colored ash remains it shows the presence of red ochre, brick dust, or other earthy coloring matter; if a dark-colored powder, or a small metallic globule is left behind, red lead has been introduced. The poisonous adulterations are not very common in this country, however, though English writers speak of them, and flour, etc., is added less commonly than in black pepper. A very good cayenne pepper can be made by grinding the pods of the red peppers which are so frequently cultivated for pickles.

Sugar.—The inferior kinds are often adulterated with rice flour, gum, etc. Mites are common in moist sugar, but less so in crystallized; if a little is dropped in perfectly pure water the mites will float and the sugar will sink; the sugar will soon dissolve, and if there is any sediment it may safely be taken for sand or other adulterant. The hard and white or coarse granulated are the best to buy, as they are purer and less commonly adulterated than the fine powdered and moist sugars. The most common adulteration at present, however, is the mixture of glucose with sugar. This reduces the sweetening power of the sugar, but it is not at all injurious to the health, glucose being itself a form of sugar. It is difficult to detect its presence in brown sugar, although it can be detected in white sugar by experts. If a mixed sugar is shaken in cold water, the cane sugar will dissolve first, and the glucose, being less soluble, will remain for some time undissolved. Pulverized sugar is sometimes adulterated with starch, terra alba, or chalk. To test it, put a teaspoonful in a glass of pure water; if a sediment is deposited, or the water becomes milky, the sugar is adulterated.

Canned Goods.—Recent tests of these goods show them to be quite generally adulterated. They are often colored with salts of copper; its presence may be detected as explained for pickles. Lead and zinc from the solder and tin can, often taints the contents to a dangerous extent. In buying canned goods the cans should be examined and only those purchased which are concave in the heads; this shows that they were hot when sealed. If the heads are convex it shows that decomposition has begun in the can, and gas is being generated. Also press up the bottom of the can; it will be solid if the goods are sound; if decomposition

has begun it will rattle like the bottom of an oil can. Observing these rules may save some of our readers or their families from being sickened from canned goods. Salicylic acid and sulphites are often added for their antiseptic properties. If not positively injurious their use is objectionable, although not easily detected by the average buyer.

Butter.—Cheap butters consist largely of the admixture of other animal fats. Analysis of suspected butter can hardly be undertaken by the ordinary housewife, but the presence of butterine is probable if the butter breaks in a crumbly manner and loses its color on being kept melted for a short time at the temperature of boiling water (212° F.).

A preparation called "black pepsin" and some other nostrums have been sold for increasing the amount of butter produced from a given quantity of milk. Their effect is to combine or emulsify the butter fat, casein, and milk sugar or lactose, together with a large percentage of water. The compound thus produced is not pure butter, and will not keep as well, but its use is not deleterious at all. To detect it, put some of the suspected, and an equal amount of genuine butter, in 2 different test tubes or glasses, and melt both with gentle heat. In genuine butter only a little water and curd will settle at the bottom of the glass, while in one of these compounds nearly $\frac{1}{2}$ the whole mass will appear at the bottom as water, curd, etc. So large a percentage is water that it is of course much less nutritious than genuine butter. From 8% to 15% of water appears in genuine butter, while from 30% to 50% is water in these compounds.

Milk.—Adulteration of this consists chiefly in adding water to skim milk, and in mixing skim milk with that sold as new. Analysis is possible only to a skilled chemist, but a rough test is possible at home. For new milk a capital test is to pour a small quantity into an ordinary glass test tube, graduated from 0 at the top to 100 at the bottom. On allowing the sample to stand 20 hours cream will form, and its proportion can be read off at a glance. A simple rude test is to dip a well-polished knitting needle into a deep vessel of milk, and quickly withdraw it in an upright position. If the milk is pure a drop will hang to the needle, but the least addition of water will prevent the adhesion of the drop. Herr Szilasi proposes a new test. Put 20 drops of sulphate of diphenylamine in a small porcelain vessel, and add a few drops of the milk to be tested. If even 5% of average well water is present a blue tinge will soon distinctly appear. The test depends on the fact that nearly all well water contains some nitrate, which will cause a blue tinge in sulphate of diphenylamine; if adulterated with perfectly pure water this test would be valueless, but that is rarely done. Sulphate of diphenylamine is cheap and easily obtained of druggists. Dextrin is occasionally added to milk. To detect it add a little solution of iodine; if the least dextrin is present the milk will be tinged red.

Exaggerated statements are sometimes made about the addition of chalk, gypsum, gum arabic, etc., to milk. This is rarely done, and as these substances are insoluble and soon settle, it would be a stupid customer who did not soon detect their presence.

As a precaution against diseased milk it is advisable to heat all milk to 160° to 175° F., keeping it at that heat for about 20 minutes before being used, as that is fatal to all disease germs, and that is better than boiling it, as boiled milk is not so digestible or palatable as fresh milk. The public health is really more endangered by milk from diseased or improperly fed cows than by anything added to it, unless it is water from a foul well.

Lard.—This is occasionally adulterated with alum and lime water to improve its color and add to its weight, and frequently with stearine and cotton-seed oil. The latter is a perfectly healthful food, and for some cooking purposes is better than lard, but these mixed products should be sold for just what they are, and not palmed off as pure lard. The methods of analysis are not adapted to the housewife's use.

Sausage.—The principal adulterations in this are a red coloring matter (fuchsin) added to color up the poorer meat; meal, used to give it more bulk and so add to the profit; and borax and salicylic acid, used to check decomposition. The tests are not adapted for domestic use.

Honey.—This is adulterated with glucose and cane sugar. It is hard to get it pure. To test the comb, apply a little sulphuric acid; that will turn beeswax black, but will not affect paraffine with which the artificial combs are made. There will be some pollen grains in pure honey, and none in artificial.

Confectionery.—This is adulterated with aniline dyes, chrome yellow, fusel oil, tartaric acid, arsenic, terra alba (white earth) and glucose, but it is not so extensively adulterated as many other articles, or as many people imagine.

Other Adulterations.—Among the other articles commonly adulterated are the following: *Arrowroot*, with other starches. *Sago*, with potato starch. *Horse-radish*, with turnips. *Isinglass*, with gelatine. *Cloves*, with arrowroot. *Ginger*, with turmeric, mustard and cayenne pepper. *Cinnamon*, with spent bark. *Pimento*, with ship-bread. *Mustard*, with yellow lake, flour, turmeric, and cayenne pepper (rarely found pure). The most practical way to obtain pure *spices* is to buy them in the unground state—it is almost the only way with some of them.

Conclusion.—Many of the above adulterations are not injurious to the health, but they all reduce the strength and value of the article adulterated, and are a fraud on the purchaser. The presence of these adulterations is easily detected by the scientific analyst, but not readily by the average housewife. The extent to which adulterations are carried is little understood by the mass of the people. An official test of vinegars made in the state of New Jersey, showed that, out of 12 samples analyzed, 11 were adulterated, and only 1 was pure. Similar tests of spices and other articles has revealed that from 25% to 80 or 90% of the samples examined were adulterated. Stringent laws are needed to check this evil, as individual action cannot cope with it.

CUTTING UP AND CURING MEATS.

It is very desirable for every housekeeper to know the location and names of the different parts of meat, and many families occasionally cut up and cure animals for their own use, and so in this chapter we will give such information on these subjects as will meet the requirements of our readers. Before corning meat hang it 1 or 2 days after it is killed.

BEEF.

1. *Rump*.—Used for corned beef, stews and steaks.

2. *Aitchbone*.—Used for stews and pot-roasts.

3. *Round or Buttock*.—Used for stews, boiling, pot-roasts, or steaks. The lower part is good to work up in Hamburg steaks and curry of beef.

4. *Hock*.—Best for soup or stews.

5. *Shin or Leg*.—Used for soup, stewing or hash.

6. *Shin*.—Used for soup or cheap stews.

7. *Clod*.—Used for soup, stock, stews, sauces, etc.

8. *Neck or Sticking Piece*.—Used same as clod.

9. *Shoulder Clod*.—Used for stews, pot-roasts, hashes, etc.

10. *Brisket*.—Used for soups, stews, corned and spiced beef.

11. *Thin Flank*.—Used for stews or for corned beef or dried beef.

12. *Thick Flank*.—Suitable for corned beef, boiling, stews, or pressed beef.

13. *Sirloin*.—Used for sirloin or porter house steaks or choice roasts. The tip is an extra fine roast, and should have 3 but is sometimes cut up with 2 ribs.

14. *Fore Rib*.—The 5 ribs nearest the sirloin are the best; it makes fine roasting pieces, or steaks; the bones are often taken out and the meat rolled, when the bones can be used for soup.

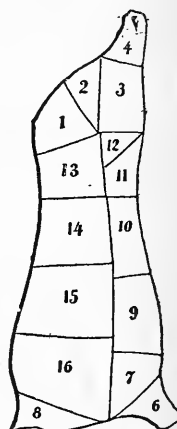
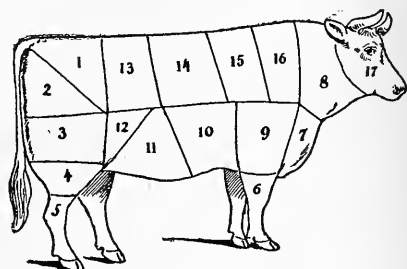
15. *Middle Ribs*.—Usually roasted.

16. *Chuck Ribs*.—Used for stews and steaks and roasts of second quality.

17. *Cheek*.—Used for soups or stews.

Other parts used are: (18) *The Brains* which, when well soaked, can be stewed, fried, scalloped or made into croquettes. (19) *Ox-tail*, used for soups and stews. (20) *Cow-heels*, which make as good jelly as calves' feet, and what remains of them is good eating; they also make good soup. (21) *The Heart*, which can be stuffed, braised or roasted, but although economical it is rather indigestible. (22) *The Liver*.—It can be boiled or fried and is very nutritious and cheap. The food known as "faggots" is made of the liver and lights of sheep and bullocks mixed with some fat. (23) *The Kidneys*, used for stewing, pies or puddings. They are cheaper than kidneys of young animals, but difficult of digestion. They need light cooking, as they are apt to dry up when exposed to a high temperature. (24) *The Tongue* is boiled and braised, either fresh or salted. It can be bought either way. (25) *Tripe*.—This is easily digested, but is not very nutritious. (26) *Sweetbreads*.—This in full-grown animals consists of the pancreas, and is not equal to the thymus gland of the calf. (27) *Suet*.—That which surrounds the kidneys is the firmest and best. (28) *The Spleen or Milt* of bullock, sheep and pig is sold for food. It is generally stuffed and roasted, or stewed or boiled for stock. (29) *The Fillet* lies under the rump and loin and weighs 6 or 8 lbs.

The Lights are the lungs. *The Pluck* is the lights, liver and heart.



It is well to remember that any part of an animal which is much exercised is tougher than parts which are exercised little or none.

VEAL.

1. *Head*.—Used for soup or jelly. *Calves' brains* are served as an entree.

2. *Neck*.—Used for stews or soup.

3. *Knuckle*.—Best stewed or boiled; occasionally roasted.

4. *Feet*.—Used for jelly making; occasionally stewed or fried.

5. *Loin*.—Prime roasting joint or for cutlets.

6. *Chump end of Loin*.—Used for roasting or cutlets.

7. *Fillet*.—The most economical roasting joint, and furnishes the best cutlets.

8. *Knuckle*.—This is cheap and is best used for stewing, boiling or for stock.

9. *Flank*.—Used for stews.

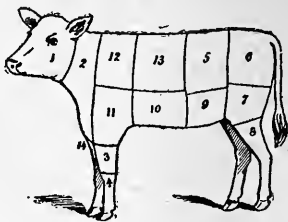
10. *Breast*.—Best stewed; sometimes roasted. This part furnishes veal tendons served as an entree.

11 and 12. *Shoulder or Bladebone*.—Used sometimes for roasting and sometimes for cutlets.

13. *Rib*.—Used for small roasting joint or for chops.

14. *Sweetbreads*.—These are found above Fig. 14 and consist of the *thymus gland* found on both sides of the windpipe. The *stomach sweetbreads* are located further along near the stomach.

Other parts used are: (15) *The Heart*, which is more digestible than bullock's heart and is liked by many. (16) *Liver*.—This is very lean, and is usually cooked with some of the inside fat or with bacon. (17) *Kidney*.—This is more delicate than beef kidney, and is preferred to it. (18) *Suet*.—Veal suet is more delicate than beef suet, and may advantageously be substituted for that in puddings and for all purposes.



MUTTON AND LAMB.

1. *Loin, chump end*.—Used for roasting or chops; chump chops are cut nearest the tail where there is the most bone.

2. *Loin*.—The best roasting joint.

3. *Back*.—Use for roasting, boiling, or for mutton cutlets.

4. *Shoulder*.—Used for roasting or for stuffing; is fatter and not so economical as the leg, but is preferred by many.

5. *Neck*.—Used for stews.

6. *Head*.—This makes excellent broth but is not much used by the well-to-do classes.

7. *Shank*.—Suitable for stews or soups.

8. *Feet*.—Used for jelly.

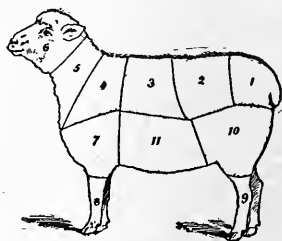
9. *Hock*.—Suitable for stews or soup.

10. *Leg*.—Used for roasts or chops; mutton steaks are cut from the leg; usually considered the most economical piece to buy.

11. *Breast*.—Suitable for stewing or boiling; often economical, but too fat for some.

Other parts are: (12) *The Chine*, which consists of the 2 loins unseparated from the backbone. (13) *The Saddle*, which consists of 2 loins and 2 legs undivided. (14) *The Heart*, which is best roasted. (15) *The Liver*, which can be fried or made into soup. (16) *The Kidney*, which can be broiled or stewed (often sold with the loin). (17) *Mutton Suet*.—This is not so good as beef suet for puddings, etc.

Lamb.—When very large it is cut into the same joints as mutton; when small it is simply cut into quarters. *Lamb's Sweetbreads* are considered a delicacy. *Lamb's Fry* consists of the liver, the sweetbreads, and some of the inside fat or leaf of the heart. *Lamb's Kidney, Head and Feet* are also eaten. *Lamb's*



kidneys cooked a little while are tender, but long cooking toughens them. Many people prefer the forequarter, but the leg is the most economical part to buy.

PORK.

1. *Feet*.—Used for pickle or jelly; occasionally boiled, or boned and stuffed.

2. *Ham or Leg*.—Used for roasting, boiling or frying; the most economical piece to buy.

3. *Bacon*.—Generally cured.

4. *Hock*.—Best stewed or boiled.

5. *Shoulder*.—Smoke, or cut steaks from this.

6. *Lower Neck*.—Used for sausages or lard.

7. *Head*.—Can be boiled or made into brawn; the cheek can be made into smoked jowls, and the snout boiled.

8. *Shoulder Top*.—Used for spare-ribs, steak or sausage.

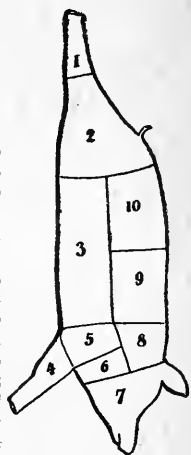
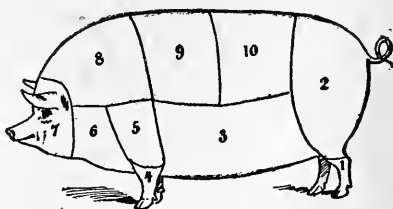
9. *Fore Loin*.—Usually roasted.

10. *Loin*.—The best roasting joint; chops are also cut from it.

Other parts are: (11) *Pig's Fry*.—This consisting of the liver, sweetbreads and some of the inside fat. (12) *The Harslet*, consisting of the liver, lights and heart. (13) *The Chine*; this is the 2 loins unseparated from the backbone. (14) *Lard*; this has a lower melting point than beef or mutton fat, and the lower the heat at which it is melted the smoother it is.

To Cut up Pork.—Have the hog laid on his back on a clean bench; cut off the head close to the base. If large there will come off a considerable collar between the head and shoulders, which, pickled or dried, is useful for cooking with vegetables. Separate the jowl from the face at the natural joint; open the skull lengthwise and take out the brains—esteemed a luxury. Then, with a sharp knife, remove the backbone the whole length; then the long strip of fat underlying it, leaving about 1 inch of fat covering the spinal column. Take out the leaf lard, and the tenderloin—a fishy shaped piece of flesh. Now cut out the middle or sides, leaving the shoulders square-shaped and the hams pointed or rounded as desired. The spare-ribs are usually wholly removed from the sides, with but little meat adhering. It is the sides of young hogs, cured as hams, that bear the name of *breakfast bacon*. The sausage meat comes chiefly in strips from the backbone, part of which may also be used as steak. The lean trimmings from about the joints are used for sausage. The chines are smoked with the jowls and used in late winter and spring. The feet should be heated over the fire until the hoofs can be easily removed; then scrape clean, and, after being a few minutes in hot water, scrape and wash carefully, and they will be ready to cook. The fat from the intestines is all removed; use that which sticks to the larger intestines for soap grease. Sometimes the smaller intestines are used for sausage cases. Try up all flabby pieces for lard. The sweetbreads, liver, kidneys and heart are used for boiling. When meat is to be pickled it should be dusted lightly with salt-petre, sprinkled with salt, and allowed to drain 24 hours; then plunge it into pickle, and keep it under weight. It is good policy to pickle a portion of the sides.

Pork is cured for the market in different ways; the fat sides are taken from the ribs, cut in pieces, packed in barrels with layers of salt, and then covered with strong brine, in which it is kept until retailed from the barrels. Sometimes the sides are well cured in the brine, then hung, dried, and afterwards packed in boxes with dry salt. At the South this is called bacon, and smoked bacon if it has been hung in a smoke-house. Pig meat is treated in the latter way, and makes a delicate meat called breakfast bacon. The hams, shoulders and cheeks of pork are pickled in brine for a certain length of time, then are taken from the pickle, and either packed dry in salt, or smoked and packed in a manner to best preserve them. One of the best ways of keeping hams in the country, is to dry the hams well in a smoke-house, then rub them well with fine salt and sugar, roll up well in newspapers, and pack in barrels, filling as you go with clean wood ashes.



VENISON.

1. *Loin or Haunch*.—Used for steaks, roasts and stews; also for making smoked venison; the ribs can be used for soup.

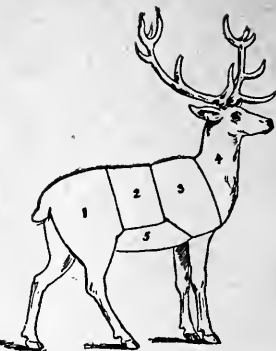
2. *Fore Loin*.—Good for roasts or steaks.

3. *Shoulder*.—Usually roasted, or boned, stuffed, and then roasted or baked.

4. *Neck or Scrag*.—Used for soup or stews.

5. *Breast*.—Used for stews or baking.

The best and sweetest venison comes from a female deer about 4 years old; doe venison (in season from October to December) is not equal to buck venison—(in season from June to October 1st). The haunch is the prime joint, though the shoulders are much esteemed. Venison requires more care in the killing, preserving and dressing than any other meat. As soon as it is cut up it should be taken into a cool, dry



larder, dried with a cloth, and hung in an airy place. If it is to be kept some time, dust dry ginger and pepper over it to keep off flies; keep it as long as it is possible to preserve it untainted. If it should inadvertently become musty, first wash it with lukewarm vinegar and water, and afterwards with lukewarm milk and water, and then dry it perfectly with a cloth and flour it.

Pickle for Meat.—Make 8 gallons of brine strong enough to float an egg, add 2 lbs. of brown sugar, and 1 quart of molasses, and 4 oz. saltpetre; boil and skim clean, and pour cold on the meat. Meat intended for smoking should remain in pickle about 4 weeks. This pickle can be boiled over, and with a fresh cup of sugar and salt, used all summer. Some persons use as much soda as saltpetre; it will correct acidity, but we think impairs the meat.

NOTE.—In salting or pickling beef or pork for family consumption, it not being generally required to be kept for a great length of time, less salt and more of other matters better adapted to retain the mellowness in meat may be used than could be adopted by those who cure large quantities for shipment. Sugar is well known to possess the preserving principle to a large degree without the pungency and stringency of salt. It acts without contracting the fibers of the meat, and therefore does not impair its mellowness, but when used in sufficiently large quantities for preservative effect it imparts a flavor not agreeable to many people. It may be used with salt, however, to great advantage in about the proportion of 1 part by weight of sugar to 4 parts of the mixture, and now that sugar is so much cheaper than formerly it may be more commonly used.

Meat Pickle.—Take of moist sugar, 2 lbs., common salt, 4 lbs., saltpetre, $\frac{1}{2}$ lb., fresh ground allspice, 2 oz.; water 6 to 8 quarts. Dissolve. Used to pickle meat, to which it imparts a fine red color, and a superior flavor.

To Cure Meat.—To 1 gallon of water add $1\frac{1}{2}$ lbs. salt, $\frac{1}{2}$ lb. of sugar, $\frac{1}{2}$ oz. saltpetre, $\frac{1}{2}$ oz. potash. Make any quantity desired, preserving these proportions. Boil these together until all the dirt from the sugar rises to the top and is skimmed off; then throw it into a tub to cool, and when cold pour it over the beef and pork to remain the usual time, say 4 or 5 weeks. The meat must be well covered with pickle and should not be put down for at least 2 days after killing, during which time it should be slightly sprinkled with saltpetre, which removes all surface blood, etc., leaving the meat fresh and clean. If this recipe is tried it will never be abandoned—nothing surpasses it.

Curing Beef and Ham.—For beef use 6 lbs. salt, 1 oz. saltpetre, 4 oz. New Orleans sugar, $\frac{1}{2}$ gallon sorghum molasses, $3\frac{1}{2}$ gal. water; boil and skim the mixture; when cold, pour it over the meat, and if the latter is bloody pour off the brine, scald it, and when cold pour over the meat again. If the meat is a ham or shoulder to be smoked, it should lie in the brine 20 to 30 days, and then be hung up to smoke. Beef to be dried should be treated the same way, but corned beef lies in the brine until it is used up.

Hams, To Cure.—To each green ham of 18 lbs. use 1 dessertspoon of saltpetre, $\frac{1}{4}$ lb. of brown sugar applied to the fleshy side of the ham and about the hock; cover the fleshy side with fine salt $\frac{1}{2}$ inch thick, and pack away in tubs; let remain from 3 to 6 weeks, according to size. Before smoking, rub off any salt that may remain on the ham, and cover well with ground pepper, particularly about the bone and hock. Hang up and drain for 2 days; smoke with green wood for 8 weeks, or until the rind assumes a light chestnut color. The pepper is an effectual preventive of the fly. (An extra recipe.)

A Southern Rule for Curing Meat.—For 250 lbs. of beef or hams and shoulders, use 16 lbs. salt, 8 gal. water, 4 oz. saltpetre, 2 quarts molasses, 1 tablespoon soda; mix and dissolve. For salting beef, first cut it into suitable pieces and pack in a clean barrel as closely as can be pressed in by the hand; put it in even layers. When all the meat is packed place on top 4 sticks crossed, and lay on them a clean stone heavy enough to keep the meat under the brine. Pack hams the same way, and after 30 days remove from the brine and smoke.

Westphalian Hams.—The famous Westphalian hams are cured thus: First rub with dry salt, and then drain 24 hours. Take 4 quarts salt, 3 lbs. brown sugar, 1 lb. saltpetre, 4 oz. salprunella, 4 oz. juniper berries; bruise, mix well, boil in 6 quarts of water, cool and skim. Take the hams from the salt, wipe dry, pour over the pickle, and rub well into the meat. Then smoke a little every day for 3 months until completely dry, when they will keep sound and improve in flavor for years. Hams shrink in smoking about 10% in weight, while pickled or salted pork gains about 10%.

Sugar Curing Hams (*English Recipe*).—As soon as the meat comes from the butcher's hand rub it thoroughly with salt; repeat this 4 days, keeping the meat where it can drain. The fourth day rub it with saltpetre and a handful of salt, allowing 1 lb. of saltpetre to 70 lbs. of meat. Now mix 1 lb. of brown sugar, and 1 lb. of molasses; rub it over the ham every day for a fortnight, and then smoke with hickory chips or cobs. Hams should be hung highest in meat houses, because there they are less liable to the attacks of insects.

To Keep Cured Ham.—A simple way is by packing closely in a stone jar, (after taking off the rind and cutting in slices) and then exclude the air by pouring over enough melted lard to cover them; they will keep this way several months. When some is taken out melt the lard and pour on again, to protect the balance.

Pickle for Corned Beef.—(1) Use 1 gal. water, $1\frac{1}{2}$ lbs. salt, $\frac{1}{2}$ lb. brown sugar, $\frac{1}{2}$ oz. saltpetre, $\frac{1}{3}$ oz. potash; use same proportions for any quantity; boil all together in an iron kettle, skim and strain; put into the pickle tub, and when cold put in the meat, having the pickle cover it, and weighting it down with clean stones. (2) For 100 lbs. of beef use 8 lbs. fine salt, 4 lbs. brown sugar, 4 oz. saleratus, 2 oz. saltpetre, and mix well; put a layer of this in the bottom of the barrel and between each layer of meat, removing the large bones. Put a weight on the top layer to hold it down, and the juices of the meat furnish all the brine necessary. Meat thus pickled is ready for drying in 6 weeks, and does not toughen in the summer.

To Corn Beef (*Pocock Pickle*).—Take 4 gallons fresh water, $1\frac{1}{2}$ lbs. coarse brown sugar, 2 oz. saltpetre, 7 lbs. common salt; put all in a boiler, take off the scum as it rises, boil well, and then let it get cold. Have sufficient to cover the meat, lay a cloth over it, and weight down the meat. The same pickle may be used again by re-boiling, and adding a small quantity of each ingredient fresh.

Spiced Corn Beef.—Prepare a mixture of 4 cups molasses; 4 cups of salt; 4 tablespoons of saltpetre; 2 tablespoons cloves; 2 tablespoons ground pepper; each day for 10 days rub this into the beef, turning the meat, and rubbing well in. This is for 20 lbs. of meat. At the end of the 10 days it can be used.

Hamburgh Beef.—Take a piece of meat from some fleshy part; scatter common salt under and over it, and let lie 24 hours to void the blood; then put into a pickle made with 1 gal. water that has been boiled, 1 lb. common salt, $1\frac{1}{2}$ lbs. coarse sugar, 2 oz. saltpetre, $\frac{1}{2}$ pint vinegar; simmer until all are melted; place the meat in a deep narrow pan and pour over the liquor, covering it completely; it will be ready for smoking in 3 weeks; dry well with a cloth, and rub pea meal all over it, until it has a good coat on it. If well smoked it will come out a bright yellow, and will keep any length of time.

Home-Made Dried Beef.—Select a nice round of beef—better from a young animal—divide it into 2 pieces, following the natural line of division very carefully, so as not to make any cuts or gashes for the fly to burrow in. Then for 50 lbs. of the meat make a mixture of 2 lbs. fine salt, 1 oz. of powdered saltpetre, $1\frac{1}{2}$ lbs. brown sugar. Rub this mixture well into the meat every morning until used up, and at the end of 2 weeks hang up in a smoke house to smoke slightly or just enough to be tasted. Excess of smoke is not generally relished. It may be left hanging in any dry place away from flies. If it molds a little on the outside that will not hurt.

Beef, Scotch Method of Drying.—Take 2 lbs. salt, 1 oz. finely ground cloves, 2 oz. of ground pepper, or in these proportions for any desired quantity. After cutting the meat into suitable pieces, rub this mixture well into it every day for 5 or 6 days; then hang the meat up to dry. This is said to produce superior dried beef.

Tongues, To Cure.—(1) Take 9 lbs. salt, 8 oz. sugar, and 9 oz. powdered saltpetre. Rub the above ingredients well into the tongues, and keep them in this curing mixture for 2 months, turning them every day. Drain them from the pickle, cover them with brown paper, and have them smoked for about 3 weeks. The above quantity of brine is sufficient for 12 tongues of 5 lbs. each. (2) Take $\frac{1}{2}$ oz. saltpetre; $\frac{1}{2}$ oz. salprunella; 1 lb. salt; $\frac{1}{2}$ lb. very coarse sugar; 4 bay leaves, 1 tablespoon of vinegar, and 3 pints water. Let it boil for $\frac{1}{2}$ hour, skim off the scum, and pour the liquid into a pickling dish; when it is quite cold put the tongue in, and turn it every day for 3 weeks, if you wish to cook it green, but if not leave it in the pickle for a month. This pickle will keep good for months if re-boiled and skimmed. Every tongue put in should first be well rubbed with salt, left to drain for 3 days, and then wiped dry.

Pickle for Tongues and Beef.—Use 1 gal. water, 2 lbs. common salt, 4 oz. saltpetre, $\frac{3}{4}$ lb. brown sugar; boil all well together. A tongue should be pickled 14 days before it is considered well cured.

To Pickle Pig's Feet.—Put them in strong brine, and leave for 1 week; then take out and boil in water to remove the brine; then pour vinegar over them, and soak in a pickle containing bay leaves, allspice and mace.

To Clean Beef Tripe.—Rinse carefully in cold water (after emptying the contents, none of which should be allowed to touch the outside). Then sprinkle on lime, put it in a tub, pour on hot water and leave 2 hours; then try scraping it with a knife—if the dark does not come off readily, spread on more lime and put in the tub another hour or two; then scrape, and rinse clean with cold water. Put it in salt water, enough to cover it, and leave 3 days; change the water each

day. Take it out, cut in strips, and whiten by laying it in buttermilk for a few hours; then rinse clean, and boil for a few hours—or till it is tender enough to mash with the fingers. Then it is ready to cook as desired.

Rennet, To Prepare.—Rennets should not be saved from calves less than a week old; those from 3 to 4 weeks old make the best. Never use a stomach of an animal the least out of health. Take the rennet out immediately after the animal is killed, turn inside out without washing, cure thoroughly with dairy salt, dry perfectly, and keep in paper bags till wanted for use. For use, soak in clean whey, saturated with salt, for 24 hours before using, frequently squeezing them with the hand to macerate. After being soaked, keep the liquor as cool as possible in tightly covered vessels until used.

To Prepare Bladders for Use.—Soak them for 24 hours in a basin of water in which a little chloride of lime has been dissolved; then clear all extraneous matter from the bladders, wash them thoroughly in clean water, and hang them up to dry.

Sausages.—Use the trimmings and other lean and fat portions of pork, selecting about twice as much lean as fat. Some consider it an improvement to add about one-sixth the weight of beef. Season to taste. Some use salt and pepper alone (say 1 teaspoon to 2 lbs. meat), and others add sage, thyme, mace, cloves and other spices. If the meat is put into muslin bags $2\frac{1}{2}$ to 3 inches in diameter, and, after being filled, are dipped into melted lard and hung up in a cool, dry place, it will keep very satisfactorily.

Pork Sausages.—For these the right proportions of fat and lean meat is about $\frac{1}{4}$ fat, and for every 10 lbs. of the minced sausage 4 oz. of salt, 1 oz. of pulverized black pepper, and 1 tablespoon pulverized sage is nearly the right proportion of seasoning. Mix thoroughly, but add no water. It can be packed down in stone jars, with hot lard poured over it, to be cut out in slices for cooking; put in cheese-cloth bags of the right size to cut off pieces to serve, or it can be filled into the small intestines of beef or pigs, and tied into links. The intestines should be cut into pieces about a yard long; strip out the contents, turn them inside out on a stick; take them off and wash thoroughly in warm salted water; put to soak over night in another salted water; the next day thoroughly scrape them on a board with a dull knife; then soak them another night in salted water, when they will be ready for use.

Bologna Sausages.—Take 3 lbs. lean beef, 3 lbs. lean pork, 2 lbs. fat bacon, $1\frac{1}{2}$ lbs. beef suet; put the lean meat into a stewpan of hot water, and set it over the fire for $\frac{1}{2}$ hour; then cut it small, each sort by itself; shred the suet, bacon or ham, each by itself. Season with pepper, thyme, chopped fine, and ground mace; fill ox-skins with it, tie them in lengths, and put them in a beef brine for 10 days; then smoke them the same as ham or tongue. Rub ground ginger or pepper over the outside after they are smoked, and keep them in a cool, dry place. (To prepare the skins, take ox intestines, cut them into strips about 6 feet long, wash them thoroughly in warm water, and then turn them inside out and wash again; scrape them with a suitable scraper designed for this use, wash off, and put them into salt water to soak until desired for use. Be very careful not to tear the skins while working on them.)

A Simple Way to Smoke Meat.—Take a kerosene or rain water barrel, and drive nails around the top on which to hang the meat; fill an iron pan or pail half full of ashes, and build a fire in it; set it in the bottom of the barrel, place a board on top and cover with a heavy cloth or blanket to keep out the air and confine the

smoke. Those without a smoke house can easily do a little smoking in this way.

Lard, To Make.—Cut the fat up into pieces about 2 inches square; fill a vessel, holding about 3 gal., with the pieces; put in a pint of boiled lye made from oak and hickory ashes, and strained before using; boil gently over a slow fire until the cracklings have turned brown; strain and set aside to cool. This will give more, whiter, and better lard than any other process.

Lard, To Bleach.—Apply a mixture of bichromate of potassa and muriatic acid in minute proportions to the fat.

Lard, To Keep Sweet.—When rendering (melting) it, throw into each kettle a handful of slippery elm bark. Add no salt at any time; the jars in which it is kept must be perfectly cleaned. This plan will keep it sweet even in the warmest weather.

Beef Fat.—This, if thoroughly cooked in water and the fat skimmed off as it rises, is very nice. It will remain soft, and is preferred to lard by many, for various uses.

Tallow, To Clarify.—Dissolve $\frac{1}{2}$ lb. of alum in 1 pint of water; add 50 lbs. of tallow in a jacket kettle (i. e., a kettle set in a larger one, and the intervening space filled with water; this prevents burning the tallow); boil it $\frac{3}{4}$ of an hour and skim. Then add $\frac{1}{2}$ lb. salt dissolved in 1 pint of water; boil and skim. When well clarified the tallow should be nearly the color of water.

Suet.—Cut fresh suet in small pieces and cover them with water; let them remain in the water bath 24 hours, but change the water once during the time; this removes the peculiar tallowy taste. Now drain well and put in an iron kettle with $\frac{1}{2}$ teacup of milk to each pound of suet; let it cook very slowly till the fat looks clear and is light brown, and till all sound of cooking has ceased. Loosen the pieces from the bottom of the kettle to prevent scorching, but avoid stirring; let it stand till partly cooled, then pour into cups to become cold. It smells as sweet as butter, and can be used in place of it for many purposes. The fat left in the pieces may be pressed out and used in various ways.

ALL ABOUT THE HOUSE.

It is a remark often repeated, but always true, that woman makes the home. The importance of the home and home life to the well being of society is so well known, and so often dwelt upon, as to need no repetition here. The butterflies of fashion may be indifferent to the value of a thorough knowledge of house-keeping, but sensible women know that all other accomplishments sink into comparative unimportance beside it, because it more deeply affects woman's real life and her relations to the family than any other. Like all other accomplishments it may be acquired by study and practice, but it can be acquired in no other way. Children should receive early instruction in domestic economy, and the lessons should be made as pleasant, and the subject as attractive as possible. It may save them from much tribulation and suffering later in life. Above all they should be taught to take a pride in their work, and a delight in doing it well. All work well done ennobles the doer, and any work slighted is a disgrace. To thoroughly understand all the details of housekeeping is to understand that which lies at the foundation of all the peace, comfort and well being of the family. It is knowledge and skill, not luck, which brings success. The admiration and esteem of husband and children will be more surely won, and much more surely retained, by the ability to manage the domestic affairs skilfully and economically, than by any of the lighter or more showy accomplishments.

Even when a woman expects that she will be able to employ servants to do most of the hard work, she should know that if she would superintend their labors successfully she must understand the details of their work. Servants are quick to detect ignorance and incompetence in their mistress and to take advantage of it also, while superior intelligence speedily commands their respect, and checks their disposition to shirk.

In housekeeping, as in everything else, system is of the utmost importance. And yet there are large numbers of housewives who do not appreciate its value. Not only should there be a place for everything, and everything put in its place, the importance of which is often insisted on, though none too often, but there should also be a time for everything. Have certain days of the week for doing certain things, and also arrange the work of the day, as far as possible, allotting a time for every duty. It is astonishing how much more can be accomplished by regular, systematic, well planned efforts, than by irregular and spasmodic work. Use your head in your work, and keep cool and self-possessed. The following rules are offered as being suggestive mainly: (1) Plan your work carefully, and work systematically. (2) Never rely on servants, but oversee everything. (3) Avoid both extravagance and waste. (4) Keep an accurate account of both receipts and expenditures. (5) Pay cash, and avoid debt as you would a pestilence. (6) When in doubt consult the index of this book.

It may safely be said that the housewife is called upon to display an amount and variety of knowledge and skill such as is required of few men. Often, without any special education or preparation, she is called upon to deal with the most diverse subjects; she must mend and care for the family clothing, and often make a good deal of it; purchase and cook the food for the family; attend to the sinks, sewers and sanitary condition of the house; look after the health of the children and doctor their colds, accidents, and lighter complaints, and so on through a long list of subjects. The object of these pages is to make a book of reference treating on the various departments of housekeeping, and, while avoiding technical and obscure terms, to place the teachings of modern science as far as possible within the reach of its readers, on those household subjects in which science plays a part. The subjects treated cover a wide range, but we have classified and arranged our information as well as possible. Modern homes are supplied with so great a variety of articles of use and ornament that their care is no small item, and we have endeavored to give the best information attainable on these matters. We often give several ways of doing the same thing. We have various reasons for this. One is the desire to inform our readers about the

matter, and another is that it is at some times more convenient to use one method than another; also in special cases one plan will work where another does not. In any event there is little danger of having too much information on any subject. Some of our readers may not be familiar with some of the materials whose use we refer to, but most of them can easily be obtained at any drug store.

THE KITCHEN, PANTRY AND STOREROOM.

The Kitchen.—On the kitchen and its management the comfort of the whole house largely depends. It ought to be large, and fitted up neatly and pleasantly, and it should have an abundance of light and a cheerful aspect. All its sanitary arrangements should be most carefully examined and attended to, since negligence here will affect the whole household. See also that it is well ventilated. The essentials in the kitchen are to have an abundance of light, good ventilation, a cheerful aspect, and convenience of arrangement so as to save all the labor possible.

The walls should be either whitewashed or painted—never papered. Whitewash is clean and sweet, and it can be renewed at any time.

If whitewash is used, at least twice a year a fresh coat should be laid on. The whitewash can be tinted if desired. If the walls are painted, a light shade is to be preferred. A good way is to cover the walls with a size made of a solution of $\frac{1}{2}$ lb. of glue to the gallon of water, and then apply a good oil paint. Painted walls should be washed at least twice a year. The best finish for the woodwork is to oil and varnish it, or simply oil it. It can then be easily and quickly wiped off when soiled. If painted, it will require a good deal of washing with soap to keep it in condition, and then the paint will wear off in spots.

The Floor.—Have the floor smoothly and evenly laid, and with hard wood, if possible. Carefully selected hard pine answers very well, but maple or birch are better, birch being best as it does not stain so easily as maple; do not use spruce nor any soft wood. Then if the floor is oiled 2 or 3 times a year with boiled linseed oil it will make the cleanest and least troublesome finish. If not oiled, apply a black walnut stain, or any other which you prefer. We explain how to stain floors elsewhere, and any woman can stain her own floor. White floors are too suggestive of aching backs and tired arms. Carpets are not suitable for a kitchen. Oil cloth is better than carpet, but it is too cold, and is not equal to the wood floor. Tiles, which are sometimes recommended, tire the feet.

Furnishing the Kitchen.—It is very desirable that a kitchen should be furnished with all the articles which will aid in performing the necessary work, but many housekeepers do not possess the means to buy all they want. There is no disgrace in not being able to buy certain articles, but there is great disgrace in not keeping those clean which are owned. The best way to do this is to never allow any article to be put away dirty. If this rule is followed uniformly there will be little fear that any article will not be clean any time it is wanted.

The furniture of the kitchen and pantry should include—

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| 1 good cooking stove or range. | 1 cooking-table. |
| 1 wash-boiler. | 1 ironing table. |
| 1 wash-board. | 1 low rocking chair. |
| 3 flat-irons. | 3 chairs. |
| 1 polishing iron. | 1 wash-bench. |
| 1 large iron dinner-pot. | 3 sizes of composition wash-tubs. |
| 1 tall, narrow, iron soup-kettle. | 2 composition water-pails. |
| 2 smaller vegetable kettles. | 1 coffee-mill. |
| 1 shallow iron doughnut kettle. | 1 spice-mill. |
| 1 double boiler. | 1 mortar and pestle. |
| 1 large tea-kettle. | 1 pair scales. |
| 3 sizes of frying-pans. | 1 bread-knife and board. |
| 1 dripping-pan for roasting meat. | 1 meat-knife and board. |
| 1 porcelain kettle for preserving and canning. | 1 vegetable knife. |
| 4 brick-shaped bread-pans. | $\frac{1}{2}$ dozen kitchen knives and forks. |
| | $\frac{1}{2}$ dozen tinned spoons (assorted sizes). |

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| 1 round cake-pan, with center stem. | 1 rolling-pin and molding-board. |
| 3 jelly-cake pans. | 1 bread-box, of tin. |
| 1 gem pan. | 1 cake-box, of tin. |
| 1 long, square baking-tins. | 2 colanders, 1 coarse and 1 fine. |
| 1 gridiron. | 1 gravy-strainer. |
| 1 wire bread-toaster. | 1 granite-ware coffee-pot. |
| 4 small saucepans of different sizes. | 1 earthen teapot. |
| 1 can-cutter. | 1 tin chocolate-pot. |
| 1 chopping-knife and tray (for meats). | 1 apple-corer. |
| 1 chopping-tray, for onions. | 2 large cooking-bowls. |
| 1 chopping-tray, for fruit. | 1 first-class cook book. |

At the sink there should be—

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| 1 tin water-dipper. | 1 water-pail. |
| 1 wash-basin. | 1 large dish-pan. |
| 1 soap-dish. | 1 large draining-pan. |
| 1 soap-shaker. | 1 large rinsing-pan. |

Have roller towels and a plenty of dish towels, and a slop-pail near at hand.

For the china closet and side-board there should be: A dinner set of crockery which includes the breakfast and tea-set, goblets, tumblers, teaspoons, table-spoons, a butter knife, a carving knife and fork, soup ladle, pepper-boxes, salt-cellar or shakers, vinegar-bottle, mustard-pot, glass dishes for pickles and celery, table-cloths and napkins, crumb-brush and pan.

A *smooth iron pot or kettle* is excellent for all general purposes, as it wears indefinitely, and is better the longer it is used. If by accident it boils dry, take it from the fire and set it where it will cool gradually; if cold water is dashed in, it will cool suddenly, and crack. Care should also be taken that iron kettles and pots should not stand with liquids in them, in cold weather, where they will freeze solid, as that bursts them.

Brass and copper vessels should never be used for cookery, as the danger of poison is too great, especially if used by inexperienced or ignorant persons. The mild acids found in foods (like acetic, malic, etc.,) readily attack these metals and produce poisonous compounds.

The *enamelled or porcelain kettle* is invaluable for canning and stewing fruit, and for making preserves, jellies, and pickles, and one should always be kept for this purpose alone, but if used as an every-day kettle for meats and vegetables the enamel very soon wears or scales off, and then it becomes a rough and easily-rusted kettle, to which everything cooked therein is apt to stick and burn.

A *double boiler* should, if possible, be owned by every family. It has many uses, and no kitchen is complete without one.

Aluminum is undoubtedly the best metal with which to make cooking utensils. It is light, durable, easily cleaned, does not rust or corrode, and is not affected by any of the mild acids found in foods. Although it conducts heat readily, food cooked in it does not burn, and the use of aluminum vessels largely does away with the need of double boilers and porcelain kettles. The cooking utensils of the future will be largely made of it we believe.

The *above list* of cooking utensils and tableware might be lengthened indefinitely if we included all the modern implements for the kitchen and pantry which are seen in the variety stores, supplemented with the luxurious and expensive dining-room ware deemed necessary by people of wealth, but very fair cooking for a small family can be accomplished with the above utensils, and a nice looking table furnished with the articles on this list. Skilled mechanics, however, know that to do good work they must have good tools and these must be kept in good condition; so, also, the woman who attempts to do her work well, should try and secure the best utensils and the most conveniences she can, and should aim to obtain improved and labor-saving devices as they appear from time to time. A trifling outlay for a new article will often save a great deal of work.

A *Salamander* is a round iron plate with a long handle attached. The method of using it is to heat it red hot, and then to pass it over dishes, the surface of which it is desired to brown, but which cannot be placed in the oven; care is needed not to hold it too close, or the surface will be scorched. A common iron fire-shovel makes a very good substitute for a salamander.

Have a good dresser, if possible, in which to keep all pots, kettles, kitchen tableware, etc. The doors of the upper part of the dresser should slide one in front of the other, instead of being on hinges. Have wide closets below, containing shelves, and drawers above the closets.

There should be 2 or 3 tables in the kitchen. It will be a convenience to have 1 table set at the end of the sink, on which to prepare the poultry, vegetables, etc., and have it set close to the sink so that water will not fall between the two. Have also a small table covered with zinc on which to rest the utensils when making waffles, omelets, etc., and another table on castors, which can be moved to the center of the room, and then pushed out of the way when not in use.

A high stool will be a great advantage in every kitchen. It can have a back or a revolving top or not, but it can be used to sit down on while preparing vegetables, ironing, washing dishes, etc., and the weariness and backache it will save will be an immense benefit. Sit down to your work when you can.

The Range.—No other article of furniture in the kitchen is so important as the range. The set and portable ranges both have their advantages, but the portable range we think is preferable on the whole. We can hardly discuss at length here the merits of the ranges, gas stoves, etc., commonly used in the kitchen, but we have elsewhere discussed the care of stoves, blacking them, etc.

Face the door leading from the kitchen to the dining-room with rubber, and put on a moderately stiff spring. This will keep it closed and prevent noisy slamming.

In arranging for the work in the kitchen the great aim should be to systematize things, and save steps and labor as much as possible. Have a good-sized sink, an iron one is best, and have it stand up on legs without being enclosed, as all dark corners will be lurking places for dirt and insects, and servants will find it so easy to overlook them! Have hooks under the sink on which to hang dish-cloths, etc. Nothing else is equal to tiles on the walls back of the sink and range. If tiles are not used, hard wood is best; and finish it with oil. Have the strainer over the waste-pipe fastened down firmly—a hinged strainer is a temptation to carelessness. Have a grooved and sloping shelf at one end, set so that it will drain into the sink, on which to place dishes after washing them. Locate the sink near the range and near a window, also, so that it can be well lighted, and have brackets arranged for lamps to light it in the evening. Be sure and provide screens for the windows in summer, and if a few flower pots are put on the window sills they will give a cheerful appearance to the room.

There are a few little details that are quite important in securing comfort in the kitchen. One is that the sink should be scoured daily with soft soap and boiling water, and rinsed. A second is that as soon as the day's work is done, the window should be opened at the top to dispel all the unpleasant smells; and a third is that the floor should be scoured at least twice a week with plenty of water.

To Clean Wooden Tables, Shelves, Dressers, Etc.—Fine wood ashes sifted on from a cheese-cloth bag is better than sand. Sand, unless it is very fine, will roughen the wood so that it will be difficult to keep it clean. Always scrub *with the grain of the wood*, and when quite clean rinse away all dirt, and dry the wood with a flannel cloth. Soda is better to use on wood than soap, as it keeps it whiter. Grease can often be conveniently removed by cutting a ripe tomato in two and rubbing it on the spot. See what we say about wood floors for further points about cleaning wood.

To Make a Pastry Bag.—Take strong muslin 12 inches square, fold together 2 opposite corners and fell together tightly 2 of the edges, thus making a triangular bag; then cut off the point and insert a tin pastry tube. It is best to make 2 or 3 bags for different sized tubes. To use the bag, put in the mixture, close the top, twist it, and hold it tightly with the right hand, while the left guides the point and presses out the mixture to form lady fingers, éclairs or anything else desired. (See the illustration accompanying "Lady Fingers.")

Keep an Account Book.—Few housekeepers realize the value and importance of keeping an account of their household expenses. If an account book was kept on a shelf in the kitchen, and entries made in it of the various expenditures, it would stop many a leak, and give the housewife a much clearer idea of where the money was going, and it would furnish a basis on which to calculate

expenses. We firmly believe in the value and utility of such a course, and the labor involved is not large.

The Pantry.—The pantry is second only to the kitchen in importance, and it justly receives much more attention now than formerly. Have the pantry roomy and well lighted. Much work can then be done more pleasantly here than in the kitchen. Place the flour barrel on a rack a few inches from the floor to secure a draft underneath, which will prevent dampness. Have hooks at one end on which to hang sauce-pans, etc., and have an abundance of drawers, shelves and closets for holding the china, tableware, linen, etc. There can hardly be too many. In arranging the pantry, systematize everything as much as possible, and study convenience and economy of labor. To the busy housekeeper this is always of great importance.

Pantry shelves are best washed with the solution of hot alum water elsewhere recommended, to rid them of ants, cockroaches, and other insects.

The Storeroom.—If the arrangement of the house will admit of it, a storeroom and a china closet will also be a great advantage. Have a small window in the storeroom to afford light. Provide also for its ventilation, and keep it locked. It will be a great economy to buy many articles of food by the quantity, and at favorable seasons when the prices are low, if only there is a suitable room in which to store them. Canned goods can be bought by the dozen; soap, candles, starch, etc., by the box, and so on. All foods which attract weevils or mice are best kept in tin boxes. These are more expensive than those of wood, but they are also more durable, and in the end more economical. Each box should be plainly labeled so that no mistakes about their contents can occur.

Brooms.—About once a week dip brooms in hot soapsuds; it can be done on wash days when the suds are at hand. It will make the brooms both tough and flexible, and will increase the wear of both carpets and brooms. Put a screw eye in the end of the handle and hang up the broom—that is the best way to keep it. Patent holders may be bought, but this answers as well. Always keep a new broom for sweeping the carpets—the old one may be used for the outside stairs and yards, or have a coarse broom for that purpose; never use the same broom for both.

DISH WASHING.

In washing dishes either have 2 pans, or 1 large oval pan with a partition in the middle, which is a very convenient arrangement. About half fill one pan (or division, if the latter form of pan is used) with water as hot as you can hold your hand in, shaking soap in it till a strong suds is formed. Half fill the other pan (or division) with clear water which is even hotter. The skilful dish washer will use *very hot* water, as the hotter it is, the more perfect will be the work. Then, taking each piece separately, wash the dishes thoroughly in the first water, both inside and out, and in all cracks and crevices, and between the tines of the forks, etc., and rinse them in the second water, and set them on the grooved dish-drainer, beside the sink, if you have one. When well drained, wipe them dry with a clean soft towel, as perfect drying is an important matter.

In washing dishes observe the proper order. First wash the glasses, and then the silverware, unless both of these are washed separately in water containing ammonia but no soap, which is really the best way to wash them. Then wash the cups and saucers and the articles which have not come in contact with grease. Then wash the plates and dishes, which should be scraped as clean as possible, and renew the suds if need be. Then wash the tinware and other utensils. After washing them, put the tin, iron and granite ware in a moderately warm place near the fire to warm and dry for a few minutes before putting them away, which will keep them fresh and sweet. In order that they may dry well do not turn down the glassware, etc., after wiping it, until it is put away in the closet. Some people prefer to wash their delicate china and glassware in a wooden bowl, as there is less liability of breaking or chipping it than in metal pans. Some use more soda for washing dishes, and less soap. It works well, and if used judiciously, very little soap is needed for this purpose. Under the head of "Glassware," "Silverware," etc., we give many hints about the care and cleaning of these articles.

A sort of small dish-mop, tied to a handle, will be found very convenient for washing small deep articles. Every kitchen should be provided plentifully with towels, and they should be as regularly and carefully laundried as any of the other clothes. A failure to boil, and dry in the fresh air, is what causes the close, sour smell in dishcloths, with which all housekeepers are familiar, and it is wholly unnecessary and unpardonable. It will be best to use 3 wiping towels each time—1 for the finer articles, another for the greasy dishes and the last for the tinware and other utensils. All the utensils of tin, iron, wood, etc., should be washed and wiped as carefully as the tableware. Soft crash towels are the best to use, and a dozen or more should be prepared at a time.

When dishes are washed in hard water add a little milk. Putting $\frac{1}{2}$ to $\frac{3}{4}$ of a cup of milk into a dishpan half full of hot water will be a great improvement at any time; it will make the dishes brighter, and keep the hands soft. It also makes the washing of pots and tins easier.

Wash dishes, kettles, etc., soon after using them; do not let them lie around unwashed.

The dishwater and soapsuds may be utilized by pouring it about the roots of the raspberry or currant bushes, or young fruit trees. Few people realize what a surprisingly good fertilizer it is. No one having a garden should waste their soapsuds.

Broom-corn tied with strong cords near the coarse ends into bundles about as large as a broom handle, makes very handy wisps for cleaning pots, kettles, dishes, etc. If you sprinkle cornmeal on very greasy dishes, and then scrape them with one of these wisps before wetting them, it will keep the dishwater much cleaner and better for use. The cornmeal can afterwards be fed to the chickens or pigs so that it will not be wasted. The wire dishcloth is invaluable in washing pots and kettles. It is always clean and never wears out.

Many servants, or perhaps *most* servants, are unreasonably careless in handling dishes, and the number broken is often appalling. They should be told that they will be required to replace all dishes which they either break or nick (the latter is quite as bad as the former) or the value will be deducted from their wages. Such a rule will both make them more careful, and so avert much needless breakage, and it will develop a habit of watchfulness in the servants which will be a great benefit to them.

Washing Glassware.—Never put glass into hot water bottom first, as it will then be liable to crack from its sudden expansion, but the finest and most delicate glass will be safe if it is slipped in edgeways, which is a *fact worth remembering*.

KNIVES AND FORKS.

Steel knives and forks should be cleaned as quickly as possible after being used; the longer they are left with stains on them the harder they will be to clean. Then dip the *blades only* into a jug of hot water and wipe dry with a soft linen cloth. Rubbing the blades with a flannel dipped in oil, leaving it on 1 or 2 hours, and then wiping dry improves them. Putting on powdered quicklime, leaving it on an hour or two, and then wiping it off, is also good. A paper box containing slacked lime should be kept near them in damp weather; the lime attracts the moisture in the air and prevents their rusting.

To scour knives and forks bath brick is most commonly used, and is undoubtedly good. If 2 ordinary bricks are rubbed together, and the dust gathered up and kept for this purpose, it is about as good as the bath brick. Rubbing them with pulverized charcoal also gives a superior polish. In scouring, use a cork or cloth, dipped in hot water or soft soap, and then in whatever scouring dust is used; a raw potato cut in two and used with the scouring dust, instead of a cork, cleans beautifully. A little baking soda mixed with the brick dust will make it polish better. Scour briskly until all spots are gone; then wash the article, rinse in hot water, and wipe dry. A better knife board, however, is one covered with very thick leather, on which emery powder is placed. Rubbing the knives on this gives a fine polish, and does not wear them out so fast as the plain board and bath brick.

Ivory, bone and pearl handled knives should never be put in hot water. The heat will soften the cement with which the handle is fastened on, and it will

soon loosen. Use only lukewarm soapsuds, and lukewarm rinsing water. Great care must be used to wipe them *dry*, and see that they are thoroughly dry before laying them away. Soapsuds does not injure ivory.

An excellent way to prevent putting pearl and ivory handled knives in water while washing them is to cut narrow slits in a piece of tin and set this over a jar or pail, full of hot soda water; drop the knives or forks in the slits and the blades and prongs will go into the water, but the handles will not.

To clean ivory and bone handles, and also to take off the yellow tinge, see "Bone and Ivory" elsewhere. When not in constant use ivory handled knives should be taken out occasionally and the handles exposed to the rays of the sun to prevent their turning yellow.

Cement for Knife and Fork Handles.—Knife and fork handles which become loose may be fastened on again by nearly filling the hollow with one of the following cements, then heat the tang and press it in: (1) Melt together 4 parts resin and 1 part beeswax; when melted, stir in 1 part fine brick dust. (2) Melt together 5 parts pitch; 1 part hard tallow; 1 part wood ashes. (3) Melt together 1 part resin and 1 part sulphur, and stir in 1 part brick dust. (4) Melt together 1 part colophony and $\frac{1}{2}$ part sulphur; when cold grind it to powder, and mix in $\frac{1}{2}$ as much iron filings or brick dust. Very tenacious.

To keep steel knives and forks from rusting when not in use there are various methods: (1) Rub them with mutton tallow (use the *raw*) and wrap silver paper, or coarse brown paper around them. Do not wrap them in woollens—they do not keep well so. (2) Prepare a strong solution of soda—4 parts soda to 1 of water; dip them (steel parts only—not the handles) in the solution, wipe dry, wrap in coarse brown paper and keep in a dry place. (3) Have a case containing sifted quicklime about 8 inches deep; plunge them in this to the top of the blades, but do not let the lime touch the handles. (See also our article on "Steel.")

To Take off Rust.—If knives become rusty, rub on sweet oil and leave it on a couple of days; then, using a lump of fresh lime, scour them until the rust is gone.

To Remove the Taste of Fish.—When steel knives and forks taste of fish, rub them with fresh lemon or orange peel; that will remove the taste.

Hints.—The cutlery used for the table should not be used to cook with, nor in the kitchen. Have separate sets for each purpose.

Never put a knife into hot grease; that will take the temper out of the steel and spoil it.

KETTLES AND VESSELS.

In buying iron utensils get the best quality, and see that they are well finished. Heat them gradually at first, and they will afterwards be less likely to crack. The iron taste may be removed by putting in a handful of hay and boiling it for a little while. Tin and wooden ware may be sweetened the same way. A good way to treat new iron utensils is to first wash, and wipe dry; then rub over the inside with some pure oil or fat; let stand a few hours and wash again; then heat gradually over the fire; then wash again with soap and water, rinse, wipe dry, and then rub hard with a dry towel; this will smooth the surface. As they are used, and the surface becomes smooth, they become more valuable. Do not wipe them with a wet cloth and then put on the stove to dry, as that will tend to rust them, and make the surface rough.

Utensils of all kinds, iron, tin or wood, should be cleaned with the utmost care.

Always fill a bowl or pan with water as soon as through with it, if you are not then ready to wash it, in order to prevent the remnants of the substance which it contained from hardening on the surface, and so becoming difficult of removal.

Frying-pans, granite-ware, etc., should be frequently scoured. Whenever they begin to look dull and rough, and all traces of the food are not removed by soap and water, scour them with sapolio or bath brick. The former is best, but keep the articles fresh and bright.

To remove the fur on the kettle, if made of iron or copper, place it over the fire empty for a short time; the scaly deposit will be loosened so that it can be removed easily. A tea-kettle may be prevented from becoming furred by putting a clean oyster shell in it.

A kettle may be easily cleaned by putting in a little hot water, putting on the cover, and boiling it a short time; the steam loosens the dirt, and it can be readily scoured off afterwards.

Iron Pots or Kettles.—A new iron pot or kettle, before being cooked in, should have ashes or hay boiled in it; then scour it well with soapsuds and sand; then rinse it out and boil clean water in it for 2 or 3 hours. Many things may be safely cooked in iron which are generally cooked in granite-ware, if it is kept scrupulously clean. The outside of iron pots and kettles can be washed with hot water and soap, or soapsuds and sand. Grease an iron pot with new lard after using, to prevent its rusting.

If anything becomes burned on a kettle scrape it off with an oyster or clam shell, which is better than a knife.

If a copper tea-kettle is used it can be kept bright and clean by scrubbing it off every morning with a cloth dipped in sour milk, and then washing it with clean water. A solution of salt and buttermilk will also clean a copper kettle readily; then rinse it well.

Before cooking fish in a kettle put it over the fire and heat it; if any odor arises clean it out with soda or whiting before using. If the smallest particle of fish remains in a kettle the next fish cooked in it is apt to be tainted.

Removing Disagreeable Odors.—Disagreeable odors, like those from onions, cabbage, fish, etc., sometimes cling to cooking utensils, even after the most careful washing. (1) If they are put in hot water containing a little washing soda, potash or concentrated lye, and afterwards washed with hot suds, then rinsed and dried, they will be perfectly sweet. (2) Odors like those from musk, cod-liver oil, etc., can be removed from pans or vessels by using ground mustard mixed with a little water. Flaxseed meal, or any other of the oily seeds, or almond cake, or bitter almonds, will answer the same purpose. Scale pans or any vessel may be thus cleaned.

Cake tins should be washed like other dishes, first thoroughly inside and out with soapsuds, then rinsed, wiped clean, and thoroughly dried.

Pie-plates, baking-dishes, pans, which have been used for baking and become rancid, pots, etc., can be cleaned by putting them in cold water, adding some washing soda, and bringing them to a boil; then set them aside to cool, and then scrub them thoroughly with hot soapsuds, using a small brush; scald 2 or 3 times with hot water, and wipe dry. This will keep them sweet and clean.

A saucepan which is clean outside will cook more quickly than one which is dirty, and all cooking utensils should be thoroughly clean on the outside. Half the smudges on hands, face, and clothing of the slovenly cook come from the outside of pots, pans, and kettles.

After making pastry put water in the bowl used, scrape the board clean and wash it if necessary and also the rolling-pin, although a neat pastry maker scarcely soils a board. If either a marble slab or a glass rolling-pin is used they should be washed each time.

A frying-pan should not have the inside scraped, as anything afterwards fried in it is liable to stick on, or burn the pan. If the inside is black, rub it with a hard crust of bread, and wash it afterwards with hot water and sand soap. Ordinarily, wash it in hot water and soda, without soap or sand; then rinse, dry thoroughly, and keep in a dry place.

For cleaning porcelain kettles, etc., see "Porcelain."

Sieves.—Wash sieves with soap and water, rinse thoroughly, and let them dry of their own accord.

Soap stone griddles are better than iron ones. After lifting one mess of cakes, rub them with brown paper before putting on another mess; do not grease the griddle as that would spoil it. When through with it rub it clean with sand-paper before putting it away; if a little rough at first, it will soon be smoothed with the sand-paper.

Tea-Kettles.—The kettle in which water is boiled for tea, of whatever material it is made, should have a lid that shuts closely, and be kept quite free from fur. If water, especially hard water, be constantly boiled in the same vessel, which is filled up from time to time and never emptied, fur will accumulate. A clean oyster shell or a marble or two put into the kettle will prevent this by continually moving about as the water boils, but a much cleaner and better plan is to

never let a kettle stand with a small quantity of water in it. When not actually needed for use pour out the water, rinse with clean water, wipe, and leave it dry.

Teapots.—To keep a teapot clean and sweet great care is needed. Immediately after use, remove the old leaves, scald the teapot out with fresh hot water, and wipe it quite dry. Never allow the inside to become stained with the old leaves; no good tea can be made in a stained teapot. The smell alone should reveal this, and yet many persons take no pains to keep their teapots clean inside. A new teapot thus treated from the beginning will give little trouble and never become stained.

Never put a teapot away, even for a few hours, with the lid closed. When the lid is closed, dampness gathers, and the pot soon becomes musty. A small stick will keep the lid open, enough to admit the air and keep it sweet.

To clean a musty teapot fill it with boiling water and add some strong washing soda; leave it in a day or two, and then wash out thoroughly.

Coffee-Pots.—For the care of coffee-pots, see our article elsewhere on making coffee.

REFRIGERATORS.

A refrigerator is so useful in preserving food in hot weather, etc., that it is a very profitable investment. Its care is important. Twice a week during the season every part, except the ice compartment, should be gone over, the shelves taken out, and all the surfaces washed and wiped carefully. Once a week use some of the "washing soda" solution given among the "Useful Articles." Care must be taken that no fragment of fish, meat, or other substance lodges in any corner to decay and taint the contents. Once in 2 weeks will be often enough to wash the ice compartment. All strong smelling articles, as well as the milk and butter, should be kept covered, and it is a good idea to keep some charcoal in the refrigerator, changing it occasionally. Do not have the waste pipe connected directly with the sewer. If the waste water is to run into the sewer, let it drip into a tunnel connected with a pipe running to the general drainage system of the house, keeping, in this way, a current of air between the drain pipe and the refrigerator. It is important that there should be no connection between any place where food is kept and any drain or receptacle of waste matter.

Two refrigerators are desirable, one for milk and butter alone, and one for meat, vegetables and other food.

If a dish containing a good-sized lump of unslacked lime is placed on a shelf in the refrigerator it will absorb the moisture, and so help to prevent mold and keep the food from spoiling.

If through the carelessness of servants, butter, grease, etc., has come in contact with the zinc lining of the refrigerator and there is a musty smell which cannot be removed with the soda-wash, mix a quart of quick-lime, and apply with a paint-brush to every part of the zinc lining—top as well as bottom and sides, washing it on thick like paint. If the wooden racks or trays cannot be made sweet by the use of the strong soda water and drying in the hot sun, paint them also with the thick lime-wash and you will be well pleased with the result.

SINKS AND DRAINS.

Always have a window over or near the sink. Glazed stoneware is the best material with which to line them. Iron is often used. Lead is not suitable as grease and soap have a tendency to adhere to it, and it is difficult to keep such sinks clean. A rusty iron sink may be cleaned by letting it dry, and then rub it with kerosene on a woolen cloth. Or rub it with emery powder, or with vinegar and salt. To prevent an iron sink from rusting dissolve $\frac{1}{4}$ lb. of asphaltum in spirits of turpentine, and apply it with a brush. Every day when through with the sink wash it with soap and water, or soda and water, and thus keep it uniformly clean. All the sink brushes should be washed in soapsuds, or soda and water, once a week. See the "washing soda" given among the "Useful Articles."

Vegetable Waters.—If the water in which cabbages, greens, onions, etc., have been boiled is poured down the kitchen sink, it is apt to emit an odor which may

permeate the whole house. It is much better to throw the water in which vegetables have been boiled in the back yard away from the house. If such water is poured down the sink, even when there are sewers and traps in good working order, some deodorizing disinfectant should be poured down immediately after.

Refuse.—Never sweep any refuse matter towards or down a drain pipe; and be sure and keep the holes or openings clear.

Flushing Pipes.—Some people think that when the water trickles or runs slowly, that it flushes out the pipe and clears the drain. That is a great mistake. A dribble of water is useless for that purpose, and is a sheer waste. What is needed to flush and clear a pipe or drain, is a *deluge* of water, which acts like a torrent, sweeping things before it.

The drain pipe should, once or twice a week, have a good disinfectant poured down it. Dissolve 5 cents worth of copperas in $\frac{1}{2}$ pail of water and pour it down. This is the best thing to use, and it will kill all foul smells and keep the drain pure. Carbolic acid and chloride of lime answer well, but their smell is offensive to many people, and the latter spoils food exposed to its odor.

To prevent the accumulation of greasy deposits there should be poured down the kitchen sink once or twice a week regularly, the year round, 1 or 2 buckets of boiling hot water containing common soda or potash. This will not injure the pipes in the least, and it will keep them clean. It converts the fats into soft soap, and clears drains which at first appear to be hopelessly choked; 2 or 3 doses may occasionally be needed. Copperas is sometimes used, but for this purpose soda or potash is better.

All the closets, sinks, and catch-basins in the house should have some good disinfectant poured down them every 3 or 4 weeks.

To detect a leak in a waste pipe go into a room where the waste pipe starts, shut the door, and pour down it a pail of boiling water containing 2 or 3 oz. oil of peppermint; let some one follow along the pipe who has not inhaled the peppermint; its strong pungent odor will readily be noticed at the point of leakage.

Sewer Gas.—When it is suspected that sewer gas is escaping from a pipe or drain it may be readily tested by moistening some muslin in acetate of lead; wrap a single layer of this muslin over the pipe where the leak is suspected, and the cloth will be darkened by the escaping gas, if there is any.

CELLARS.

Instead of being neglected, as they too often are, cellars should be considered as one of the most important features of a home. They should be kept scrupulously clean, and well drained and ventilated. Many cases of disease can be directly traced to ill-kept cellars. Look after the drainage, and see that the cellar is kept as dry as possible. Attend also to the ventilation. A brick taken out from the bottom of the chimney flue makes a good opening for the escape of the damp air. Ventilate at the bottom when possible, so as to change the whole air in the cellar. Open and ventilate it as early in the spring as the weather is at all suitable, and during the whole season admit as much fresh air as possible. During summer the windows should be opened for ventilation mostly at night—the last thing before retiring—and kept closed during the day. This allows the cool air to circulate during the night. The object to aim at is to keep the cellar cool and dry. Air admitted on a warm day into a cool cellar, will deposit its moisture on the cellar walls, and defeat the very object sought. Lime will absorb the moisture and noxious gases, if they cannot be expelled, or their formation prevented. A peck of lime will absorb about 3 quarts of water, and in this way a cellar can be soon dried, even in the hottest weather. Charcoal is also a great absorber of gases, and when a cellar cannot be well ventilated, and has a damp smell, a few plates of charcoal set around will greatly improve the air. A tub of broken ice with salt in it will lower the temperature of a cellar at any time.

In cleaning the cellar in the spring, change the places of all boxes, barrels, etc., in order that the dampness beneath them may thoroughly dry out. Sweep overhead, and down the walls, and clean out all nooks and corners. Take special pains to clear out all remnants of vegetables, and all shreds of growing things, in

order that they may not remain to decay and pollute the air. Exhalations from such things will find their way into the rooms above and often injure the health of the family. It is an excellent plan to whitewash the walls and ceiling, making the whitewash yellow with copperas, and add a little salt. That will kill all insects and sweeten the cellar. Carry out and destroy all rubbish, and sprinkle thoroughly all over the cellar bottom, a strong solution of copperas water and common salt, put in a watering pot; a second sprinkling also will be all the better. The unpleasant odor which often taints milk, meat, etc., can be prevented by using about 1 oz. of carbolic acid to a gallon of whitewash.

Chloride of Lime.—As the odor of chloride of lime will spoil the flavor of all foods, it should not be used to disinfect cellars.

A *hanging shelf* in the cellar is indispensable, and a dark cupboard for storing canned fruit. The bottom of this cupboard or closet should be well set up from the bottom of the cellar to prevent dampness and mold.

Cellar windows should (1) be protected on the outside with iron bars, strong coarse wire netting, or strong wooden bars; (2) inside this outer screen should be a wire screen, fine enough to keep out flies and other insects; (3) the glass windows should be hung on hinges to open and shut in a moment's time when needed. A cellar should be well supplied with light.

Divide the cellar into different rooms which can be kept at different temperatures, if the cellar is to be used for various purposes such as storing vegetables and fuel, and containing the furnace.

The Floor.—Make the cellar floor of about 6 inches of concrete, and cover it with Portland cement or asphalt. In damp soil put tiling under the floor, and so drain the water out and carry it away from the house. Remember that a cellar free from dampness and ground air is essential to health, and if economy is necessary other things should be sacrificed to obtain this.

The Walls.—If cellar walls are built of brick, water will pass through however thick they may be, unless they are built hollow. In building, put a thin outer wall 2 or 3 inches from the main one, binding the 2 together by an occasional brick laid across. Make the wall air and water tight if possible.

If cellar walls are damp, apply one of the compositions given elsewhere for damp walls.

When cellars have been flooded they should be thoroughly disinfected after the inundation subsides. About the best thing for this purpose is chloride of zinc; copperas is cheaper, and answers fairly well, but is not equal to the zinc.

The Garbage Pail or Barrel.—Neglected garbage pails are a sure and ready breeding place for dangerous and disease breeding bacteria; and yet many otherwise neat housekeepers often neglect them. They should be regularly emptied and carefully cleaned. On the weekly washing day, when there is a good supply of suds, is a good time for cleaning them. Take an old broom and scrub the pail thoroughly with the suds, and scrub the lid also. Then throw in a solution of washing soda or lye, in hot water, and scrub it around with a little whisk, touching every part with this disinfecting solution; then rinse it with clean water, drain it, and set in the hot sun to dry.

THE ICE-HOUSE AND ICE.

Ice in the summer is a great convenience, almost a necessity, and a supply can be put up by people in the country much more easily than many imagine. An ice-house need not be put under ground even in part, and the expense of building a moderate sized one is small, or a corner can be partitioned off in the shed, or even in the barn. The best lumber is not needed, but it will be a good plan to coat it inside with coal tar to prevent its decaying from its constant exposure to dampness. The roof should be tight, and provision made at the bottom for drainage so that any water which comes from melting ice may run off freely. It is not necessary to use matched lumber, but a space of 12 to 15 inches should be left between the ice and the walls, when packing it away, which should be filled in with sawdust, and as that settles down, more should be added. Chaff or straw cut fine, may be used instead of the sawdust if that is hard to get. As the ice melts rather more at the sides than at the top, the house should be rather

wide than deep. The best time to cut the ice is as soon in the winter as it is frozen sufficiently thick, and before it has been thawed or honeycombed by the sun, as happens later in the season. If packed away when the thermometer is about zero it can be handled most easily, and keeps best. Put a foot or more of sawdust on the floor before packing in any ice. Cut the ice in even blocks, and pack it as closely as possible, filling all crevices with sawdust, and when the ice is all stored spread 12 or 15 inches of sawdust on the top. Do not allow any openings for drafts. The ice will cool the air surrounding it, and if that is carried away and warm air comes in to fill its place, it will hasten the melting of the ice; also when taking out ice for use, cover the openings which are formed with sawdust, so that none will be left exposed to the air. By this simple plan families in the country and villages can lay in a year's supply of ice at a very slight expense.

Hints About Ice.—Ice should only be cut from clear streams and ponds in which the water is fresh and pure. The poisonous properties and living organisms contained in impure water are *not* destroyed by freezing, although many people erroneously think they are. Much of the ice sold in our cities and towns is utterly unfit for drinking purposes because of these contaminations which often endanger the health. Always rinse ice well before sending it to the table.

To Keep Ice.—It is sometimes desirable to keep a small quantity of ice where there is no refrigerator. In that case, put the ice on a dish, cover it with a napkin, set it on a pillow, put another pillow over it, and it can be kept a week or so. Or, wrap it up in paper—newspapers are as good as any kind—and then cover it with woolen or other cloths. Each time the ice is opened, dry paper should be supplied. The sheets can be dried and used over again if desired. Wrapped in 3 or 4 thicknesses of woolen cloth it will keep for some time if set in a cool place.

To Cut Ice.—Ice may be readily cut by tapping it with a hatchet, or any sharp-pointed instrument. An awl will break ice easily, and is much better to use than to batter up knives, forks, etc., trying to cut it. When not in use, stick the point of the awl into a cork. Ice may be cut into small pieces of any shape by merely tapping it with the point of a needle.

To Keep Ice-Water.—Ice-water may readily be kept a long time by putting cotton batting between two thicknesses of paper (use heavy brown paper, or 2 or 3 sheets of newspaper) and making it into a pail-like covering, large and deep enough to set over the pitcher and completely cover it. A cheap and handy ice pitcher is thus readily made.

Freezing Mixtures.—Ice in combination with salt is the best material for freezing ices, etc., but when ice is not readily obtained, or when traveling, or for cooling water or food in sick rooms, etc., where ice is not readily managed, freezing mixtures are often very convenient. The following may at times be useful: (1) Thoroughly mix 1 part by weight of muriate of ammonia with 2 parts nitrate of potash or saltpetre; next mix and stir well together equal quantities of this mixture and finely-crushed washing soda; put them in a freezing machine and pour on as much cold water as will dissolve them. (2) Take equal parts of muriate of ammonia and nitrate of potash; when required for use add more than double its weight of water. (3) Use sal-ammoniac, 5 parts; nitrate of potash, 5 parts; Glaubers' salts, 8 parts; water, 16 parts. With this the thermometer can be lowered to 10° F.

All freezing mixtures have some solid substance which rapidly turns to a liquid, and in so doing it absorbs heat from the air or surrounding substances and so lowers their temperature. It is on this principle that their value depends.

WELLS, CISTERNS AND WATER.

Wells.—An ample supply of pure water is of the first importance to the health of any family. In cities and villages there is great danger that the water in wells may be contaminated, and even in the country that is a source of danger that should be guarded against. As a rule deep wells are safer from contamination than shallow ones, but they may be subject to pollution under certain circumstances. As to the least distance between wells and cesspools compatible with safety, while the London Local Government Board is satisfied with 20 to 30 yards

other authorities insist on 200 yards. It is safe to say that cesspools should be as far removed from wells as possible. Frequently in country villages, wells and cesspools are so intermixed that the entire bed of water is polluted, and then all the wells are unsafe. In isolated houses, if the well and cesspool are some distance apart, pollution will depend chiefly on the direction of the movement of the underground water. If this movement is from the cesspool toward the well, the polluted water will flow towards it; if the movement is in the other direction, the polluted water will flow away from the well. Hence, before sinking a well where sources of contamination are in the vicinity, the direction of the flow of the underground water should if possible be ascertained. It is not safe to assume that this flow is in the direction of the fall of the land. While it is often so, it is not always. Generally, however, it would not be wise to have a cesspool higher than a well in its neighborhood. Contamination from surface soakage can frequently be prevented by raising the top of the well above the adjoining ground, and paving the surface round the well with a slope, so that the rain-water runs away from it.

It is best to always have the land around a well slope away from it wherever possible. People who throw slops and refuse near a well act with criminal carelessness—rank poison might about as well be put in the water. Don't commit suicide that way. A well should always be covered over so as to exclude all leaves and flying matter.

In cities the public authorities should supply wholesome water. The consumer should see that it is not contaminated on his premises. *Boil* the water if there is doubt about its purity, as boiling kills all disease breeding germs, and is the readiest way to insure safety to the health. The water should actively boil 20 to 30 minutes to be effectual—less than that is not a sufficient safeguard.

To *examine a well or cistern* reflect in the sunlight at morning or evening with a good-sized looking-glass. If there are any contaminating articles present, like leaves, etc., they can be readily discovered in this way, and should be removed.

Carbonic Acid Gas or "Choke Damp" in Wells.—This is heavier than air and will often collect at the bottom of wells, cisterns, etc. Before entering them a lighted candle should be lowered; if it continues to burn no such gases are present; but if it goes out, it will be dangerous for any one to enter until the poisonous gases are expelled. To do this, throw down a peck or 2 of unslaked lime; as it slacks it will generate heat enough to start an upward current and drive out the foul air. Test it again, however, before entering. A few very hot bricks thrown in will often answer the same purpose, or some lighted shavings or paper thrown in may answer the purpose.

Recovering Lost Articles.—Any small steel or iron article lost in a well or cistern may be recovered by letting down a strong magnet with a cord.

Cisterns.—The position of a cistern should be carefully chosen. It should be where it can be got at, and should be arranged so that the air can get at it to ventilate it. It should not be located where it will be exposed to foul odors, nor to a steam-laden atmosphere.

Linings for cisterns are numerous. *Cast iron* cisterns made of plates bolted together, if kept full and not subject to rust, are unobjectionable. *Galvanized iron* linings are attacked by some waters and are not suitable for any cistern from which the water will be used for drinking purposes. *Sheet lead* is sometimes used. While it cannot be said that all water drawn from a leaden cistern will injuriously affect the health if used for drinking, it is not the best lining to use. Some waters attack lead more readily than others. A whitish coating formed on the interior of a lead-lined cistern is due to a chemical alteration of its surface, and then the contained water may be drunk with more or less impunity. In cleaning out a lead-lined cistern never scrape the surface, but merely wash it down with a moderately hard brush, because the effort should be not to remove this whitish coating, but only to clean it. *Zinc* is one of the worst linings, and should never be used for a cistern containing water that will be used for drinking. *Wooden tanks or barrels* should not be employed for storing water any where in a house, as they become lined with a low vegetable growth detrimental to health. *Slate and stone* make as good linings as can be devised, but are little used because of their weight. A *cement lining* is nearly as good. A good cement

to use is made of 2 parts sand and 1 part hydraulic lime. Mix these together first, and then add the water, mixing it as needed, as it begins to harden soon. The coating should be an inch thick.

Cisterns are sometimes built with a brick partition through the center, and the water being let into one part filters through into the other. Although this does not make a perfect filter, it answers fairly well, but such cisterns should be carefully cleaned out from time to time.

All cisterns should be cleaned at least once a year.

Do not build cisterns under the house, as the air above them will then always be bad, and they cannot readily be cleaned. On no account allow any connection between the cistern and any receptacle of filth; water is contaminated too easily.

Never allow an overflow pipe from a cistern to run to a cesspool or privy vault, for gases may thus enter and permeate the water. See what we say elsewhere about the absorbability of water. Many lives have been thus lost. Filter or boil cistern water before drinking it.

A wooden pump in a cistern will soon decay, become covered with moss and collect filth. The best thing is an iron pipe, with the pump in the kitchen.

The cheapest of all cisterns are made by setting fire to the inside of kerosene barrels; as soon as the kerosene is burned out and the barrel begins to char, turn the top down onto the ground to smother the flame. These barrels may be placed at the rear of buildings under the eaves. Over each one intended for clean water tie a square of cheese-cloth with a sag in the center; this keeps out dirt and mosquitos. After being emptied once or twice, and refilled by the rains, the water (*after well boiling*) will be fit to use for cooking purposes. In a dry time a little water should be left in the barrels to prevent shrinkage. In this way they will be sweet and good for years—one known to the writer has been used 20 years. (This answers in the country where wood is burned and there is little soot, but is hardly adapted to cities.)

Water.—Testing Water.—The impurities in water for which tests are applied, embrace those which affect its character for drinking, cooking and washing purposes. For cooking and washing, water cannot be too soft. For drinking, however, it should be moderately hard, as it supplies much of the lime required in building up the bones of the body. The chief evil in drinking water, is the presence of organic ferments, by which are meant all contamination from sewers or drains, decaying matter, etc. The simplest and easiest method of neutralizing these organic ferments is by *boiling*. All the drinking water should be thus treated when such contamination is suspected, for boiling practically neutralizes all organic contaminations by killing all bacteria and spores.

Heisch gives a very simple test for the purity of water. He says that good water should be free from color, unpleasant odor and flavor, and should afford a good lather with a small proportion of soap. If $\frac{1}{2}$ pint of water be placed in a clean, colorless, glass stoppered bottle, a few grains of the best white lump sugar added, and the bottle freely exposed to the daylight in the window of a warm room, the liquid should not become turbid even after exposure for a week or 10 days. If, while the stopper remains secure, it becomes turbid, it is open to grave suspicion of sewage contamination; while if it remains clear it is almost certainly safe for drinking and all domestic purposes.

Dr. Hagar has proposed a very simple and valuable test for the presence of fermentable poisonous matter. It consists in putting a tablespoon of a clear solution of tannin in a tumbler of the water. If any gelatinous turbidity appears within the first hour, the water is unwholesome. If turbidity occurs within 2 hours the water is not to be recommended. If no turbidity occurs within 5 hours, the water may be considered good.

Test for Hard or Soft Water.—Dissolve a small quantity of good soap in alcohol; let a few drops fall in a glass of the water. If it turns milky it is hard; if not it is soft.

Test for Earthy Matters or Alkali.—(1) Take litmus paper dipped in vinegar, and if, on immersion, the paper returns to its true shade the water does not contain earthy matter or alkali; otherwise it does. (2) If a few drops of syrup be added to a glass of water containing earthy matter, it will turn green.

Test for Acid.—Put in a piece of litmus paper; if it turns red there must be acid present. If it precipitates on adding lime water, it is carbonic acid. If a blue sugar paper is turned red, it is a mineral acid, and there would be reason to suspect poisonous metallic salts.

Test for Carbonic Acid.—Take equal parts of the water to be tested, and clear lime water, and pour them together. If combined or free carbonic acid is present, a precipitate is seen, in which, if a few drops of muriatic acid is added, an effervescence commences.

Test for Iron.—(1) Boil a little nut-gall, and add to the water. If it turns grey or slate color, iron is present. Or, (2) dissolve a little prussiate of potash and add it; if iron is present it will turn blue.

Test for Lime.—Into a glass of the water put 2 drops of oxalic acid, and blow upon it; if it gets milky, lime is present.

Test for Magnesia.—Boil the water to one-twentieth part of its weight and then drop a few grains of neutral carbonate of ammonia into a glass of it, and a few drops of phosphate of soda; if magnesia be present it will fall to the bottom.

To Soften Hard Water.—Water is said to be hard when it curdles soap. To soften hard water there are various methods: (1) Boiling water softens it greatly. (2) A little quicklime (2 oz. will answer for 20 or 25 gallons) added to water and allowed to stand over night will soften it; the lime unites with the carbonates and precipitates to the bottom. (3) Put wood ashes or a gallon of good lye into a barrel of water; it will soften the water in 1 night. (4) Ammonia will soften water, but is too expensive to use for large quantities. (5) A boiler $\frac{3}{4}$ full of water can be softened by adding 2 oz. of sal soda. (6) Dissolve a box of concentrated lye in 1 quart of water; keep it bottled; 1 teaspoon of this will soften half a boiler of water. (7) A little borax will soften cistern water hardened by long standing. (8) Hard spring water may be softened by adding a little chalk.

The hardness of water is caused by the presence of certain salts, like those of lime and magnesia, sulphate of lime (gypsum) being the most common. When carbonate of soda is added it unites with the sulphate of lime, forming carbonate of lime, which settles in solid form.

Water for Cooking.—Draw your water for cooking from the cold water faucets—never from the hot water faucets. For either drinking or cooking do not use water which runs through zinc lined iron pipes; it will do for washing, but that is all. (See what we say elsewhere about galvanized iron ware.)

To Clarify Rain-water.—When rain-water in a cistern has become dark and greasy looking, it may be clarified quite well with powdered alum and borax; $\frac{1}{2}$ lb. of each will answer for 50 barrels or more. The sediment will settle in a few hours.

Charcoal put in a bag and hung in a barrel or cistern of dirty or foul smelling water will purify it.

“Wigglers” in cistern water may be easily cleared out by putting in a few small fish (minnows); they will eat the “wigglers,” and clear the water.

To Purify Stagnant Water.—Fit a suitable pipe on a pair of bellows, and drive as much air as possible through the water; then allow the water to settle and it will be fit for use.

The Absorbing Power of Water.—Few people realize the absorbing power of water. A pail full set in a room, at the ordinary temperature, will absorb 1 pint of carbonic acid gas; ice-water will absorb a quart, *i. e.* twice as much, because when very cold its absorbing power is greater. It purifies the air, but it will be readily seen that water is not fit to drink after standing for a time in a room.

To purify the air in a room a pail or pitcher of cold water, changed frequently, is a simple and valuable aid, and for the reason stated above.

Water may be kept cool when you have no ice, by putting it in a jar or tin pail, covering it with coarse wet cloths or carpets, and putting it in a cool, shady place, where there is a breeze or draft if possible; the rapid evaporation from the wet cloths, cools the water by absorbing the heat from it.

Filtering Water.—An inexpensive domestic filter may be made as follows: Take a good common iron pail to the tin-shop and have a hole cut in the center of the bottom about $\frac{1}{4}$ inch in diameter, and have a piece of tin about $\frac{3}{4}$ inch deep soldered around it to form a spout to direct the flow of water in a uniform direction. Obtain some fine stones or pebbles, wash them thoroughly, and place them about 2 in. deep at the bottom of the pail. On this put a sheet of horse-hair cloth or canton flannel, cut to the size of the pail. On this place a layer of animal charcoal about 3 or 4 in. thick. Any charcoal is good for this purpose, but animal charcoal is much better than wood. It can be bought at the druggists. Put in a second sheet of the cloth, and on this put a layer of iron filings, borings or turnings, mixed with an equal quantity of fine charcoal. The iron filings should be washed in a hot solution of soda or potash before using them, to remove oil or other impurities, and then rinse them carefully in clear water. The finer they are the better. Have this layer about 6 in. thick. Then place another sheet of the cloth, and on it about 2 in. of fine, clean silicious sand,

like that used by glassmakers, and on top of this more cloth, with a few pebbles to hold it down and you will have a perfect filter, producing a remarkably pure drinking water. Of course a wooden keg may be used in place of the iron pail suggested, with a faucet rigged at the side to draw off the water; but the water should filter through *slowly* to obtain the best results, and the deeper the bed of iron filings and charcoal the more speedy their action will be. Any filter whatever will in time become contaminated with the impurities collected from the water—the length of time depending on the amount of the impurities. For this reason the fillings should be taken out occasionally (say once in 6 or 8 months) and the pebbles and sand thoroughly cleaned with *boiling* water and soda or potash, and then rinsed, and the charcoal and iron renewed. Because of failure to do this many old filters become so clogged with impurities that they become very filthy, and almost worse than none at all. The value of charcoal as a filtering material is well known, and the value of the iron consists in the fact that it attracts oxygen to its surface, which is changed to ozone, by which the organic matter in the water is consumed.

Professor Dobroslavine, the chemist, of St. Petersburg, says that if to each 12 quarts of water there are added 8 grains of per-chloride of iron and 12 grains of crystallized carbonate of soda, it will cause a precipitate which will carry down all suspended impurities, leaving the water clear at the end of 45 minutes.

Pure snow when melted produces $\frac{1}{8}$ its bulk in pure, soft water.

Pumps and Pipes.—*To Prevent the Freezing of Water Pipes.*—In the winter the best way in cities where hydrants are used is to have a valve arranged so that the water can be turned off and the pipes emptied at night. Letting the water run slowly prevents freezing, but is wasteful. Where pumps are used a simple and effective plan is to take out the lower valve on the approach of winter, and drive a tack under it, so arranged that the valve will not close perfectly tight. This will not prevent the pump from working, but will allow the water to leak back into the cistern or well. The pump will have to be primed on starting it, but that is easily done. Another way to prevent the freezing of water pipes is by having a small spherical cistern of thin copper attached to the lower part of the water pipe, and a gas burner fixed below it. When the gas jet is lighted the cistern becomes a boiler on a small scale, circulating sufficient warmth through the pipes to prevent their freezing. The household may be saved from the winter's freezing mishaps by this simple device.

A frozen pump may be thawed out most quickly by putting a small pipe or tubedown directly on to the ice, and then pouring in the hot water through this pipe. It strikes directly on the ice and thaws it 10 times as fast as it would if poured into the pump without the pipe or tube.

To thaw out frozen pipes the readiest way is to pour hot water on cloths laid over the frozen part. The freezing will generally be found to have taken place at a bend, or near a window or exposed place. If the pipe is slightly underground it may be thawed by putting a heap of lime on the earth, wetting it a little, and covering it with blankets; it will draw the frost out of the ground and thaw out the water pipes.

Water pipes which are liable to freeze, as when they run along cold walls, etc., will be somewhat protected by wrapping them with some non-conducting material like felt, mineral-wool, asbestos, etc.

For a leakage in an iron pipe, mix iron filings into a stiff paste with vinegar. Dry the pipe and fill the crack with this paste; it will soon harden and stop all leakage. It will also securely fasten a thin iron plate over a hole too large to stop with the paste alone. For other cements see "Cements."

To prevent the "fur," i. e. the scale or lining crust which so frequently chokes up hot water pipes, dissolve in the water some sal-ammoniac (muriate of ammonia) at the rate of 1 oz. to every 60 gallons of water used. Do this twice a year, spring and fall, and it will cure the trouble.

Kinds of Pipe.—Iron water pipes are much better to use than lead. Both oxidize, but the oxide of lead is poisonous, and the oxide of iron is not. Water for drinking should never be allowed to stand in a lead pipe. Tin pipes, or iron lined with tin, are the best there are; galvanized iron should never be used, for the reason explained elsewhere about galvanized iron ware.

ROOFS, DOORS, WALKS, ETC.

Roofs.—Shingles covered with a wash composed of lime, salt and fine sand or wood-ashes, and put on like whitewash, will be very much more safe against fire from falling cinders. The wash also preserves against the effect of the weather. Old shingles are generally more or less warped and cracked. This application, by washing the upper surface, restores them to their original form thus closing the space between the shingles, while the lime and sand fills up the cracks and prevents warping. The older the shingles the more they are benefited. A little lamp-black added will make the wash the color of the old shingles and prevent the glare of a whitewashed roof.

New shingles which before being laid are dipped in a wash of lime, and then dried, will be much more durable, and moss will not gather on them.

When felt is not convenient a waterproof roofing may be made from old newspapers, by applying coats of hot coal tar to them with a brush, and uniting several thicknesses together.

Small leaks in roofs may be stopped with one of the waterproof cements given among our cements; or take common white lead paint and mix fine sand in it.

Tin roofs should be kept well painted to preserve them from rust.

A roofing for outbuildings may be made by boiling tar in an iron kettle, and stirring in finely powdered charcoal till it is as thick as mortar. Then spread it on a boarded covering to the thickness of $\frac{1}{4}$ inch, and it will become hard and durable.

Doors.—Ill fitting doors which do not shut tightly but have cracks around them admitting the air, may be readily remedied as advised for the similar difficulty with windows (which see). The chalk should be applied to the door, which will prevent its adhering to the putty, and all cracks will be effectually closed.

Hinges which creak may be cured by applying a little oil or mutton tallow, or put a little graphite or powdered lead from a soft lead pencil on the spot which squeaks.

Locks which do not work well are often merely rusted; apply a little oil and they will be all right. Latches and locks should have a little graphite or oil applied occasionally, and they will work more easily.

Clean plated handles and hinges on doors by rubbing with a flannel cloth wet with kerosene and dipped in whiting; polish with dry flannel. Clean the woodwork as explained elsewhere for painted or varnished surfaces.

Walls.—Brick walls should be hollow. As brick are great absorbers of water, if the wall is solid and the plaster laid directly on it the house will be damp in spite of a housekeeper's efforts. Never lay the plaster directly on the brick, but "furr" it, nail on scantling, and then lath and plaster on that as in a frame house.

Damp Walls.—If all houses were built as they should be, with hollow walls, there would be little complaint of damp walls. A course of slate cemented into a wall while building, as soon as the wall leaves the ground, or just above the foundation, effectually prevents all dampness from rising. It is a usual thing in newly built houses for the walls to exude the moisture which has been used in making the plaster; this is called "sweating;" wipe the walls dry as often as it appears.

(1) The following simple remedy applied to *stone walls* will prevent all damp from entering, and any vegetable substance from growing upon them. Take $1\frac{1}{2}$ lb. resin, 1 lb. Russian tallow, and 1 quart linseed oil; melt, mix well together, and apply hot to the surface of the stone. (2) For *brickwork* the "*Builder*" gives the following: Take $\frac{3}{4}$ lb. of mottled soap to the gallon of water; apply it steadily and carefully with a large flat brush so as not to form a froth or lather; let it dry 24 hours. Then mix $\frac{1}{2}$ lb. of alum with 4 gallons of water; let stand 24 hours, and apply it in the same manner over the coating of soap. Do this in dry weather. (3) Perhaps no application is cheaper or more efficacious than the following: Into a tin or metallic pail place 1 gallon of benzoline spirit; then melt $1\frac{1}{2}$ or 2 lbs. of soft paraffine wax, and when well heated pour it into the spirit, and stir. Apply the solution to the walls while warm, with a whitewash brush. To prevent the solution from chilling, place the tin in a pail of hot water, but on no account bring it near a fire or a serious accident may occur. Whilst this is being applied the smell is very disagreeable, but that soon goes off. Hard paraffine wax is not so good to use, as the solution has to be kept much hotter.

Walks.—*To Kill Weeds.*—Gravel walks, pavements or driveways, may be kept clear of weeds or grass by making a strong brine of common salt and water; put this in an ordinary sprinkling pot and sprinkle it on thoroughly. Do not get any on the grass on the side, or that will also be killed. Or a dressing of salt may be scattered along the walk or drive instead. It is death to the weeds.

For garden walks one of the simplest and best things to use is common coal ashes. They become hard and make an excellent walk, while grass and weeds will not grow on or through them. An artificial asphalt for walks, shed-floors, etc., may be made by leveling the place to be covered, and then spreading on a thin coat of tar; over this sift some road-sand or coal ashes; let it harden, and repeat the operation 4 or 5 times.

To kill moss and earth worms in lawns, mix equal quantities of earth or leached ashes, and fresh lime (pulverized) and sprinkle it on; it will kill them.

Lightningrods.—When properly constructed lightningrods have been proved beyond question to be a sufficient protection against lightning; when not properly constructed they are worse than useless. The essentials are: (1) The rod must offer an unbroken conductor from the apex to the ground. The joints are best welded together, or screw both ends into one nut. (2) The shorter and more direct the course of the rod to the earth the better; bends should be rounded and not formed at acute angles. (3) Copper is the best conductor but too expensive. Iron is generally used. Galvanizing improves it; or cover it with black paint, (itself a good conductor) as a protection against rust. Wire $\frac{1}{2}$ to $\frac{3}{4}$ in. in diameter will do. (4) The apex should be pointed. A coating of platinum or other non-oxidizable metal is an improvement. So is a group of 3 or 4 points. Any blacksmith can weld the extra points to the main wire. (5) The circle within which the rod is effective is generally assumed to be twice the height of the rod; hence on large buildings there should be several rods. (6) All metallic roofs, tanks, etc., should be in good conducting connection with the rod. So should iron water pipes or steam pipes within the building. (7) Fasten the rod securely in place with iron eyes or staples. Glass insulators are of little value, as, when wet, they become conductors. (8) The earth connection is very important. Nothing is better than connection with the iron water pipes in a city. In the country, run it into the nearest well. Weld on a copper end to withstand the rust, and let it go to the bottom. Never let the rod end in dry earth. Where a well is not convenient make a hole 6 in. or more wide, and 9 to 16 feet long, put the rod in the center, and pack around it with freshly heated charcoal. It will preserve the wire and lead the electricity into the ground. Any blacksmith can put up such a rod. The above are all the essentials. All fancy fixings in addition are useless.

HOUSECLEANING AND DUSTING.

Housecleaning time is usually one of terror to all the members of the family—to the women who do most of the work, and the men who are made uncomfortable during the process. If properly managed, however, many of the discomforts can be prevented, and the work made much easier. The first thing to do is to make ready. Take time for this—a week at least. Provide carpet tacks, soap, disinfectants, materials for making whitewash, etc., so that at the last minute you will not run out of the very thing you need most, and so lose both time and patience.

Arrange for your help also. Unless it is some one who has helped you before and knows your ways it will be better to get a woman a few days in advance, so that you can get her broken in a little before the tug of war begins.

Do not start too early in the spring. Wait until you can let the fires go out without discomfort, and until there is settled and pleasant weather. It is much easier to clean house during pleasant weather; but no hard and fast rule can be laid down about the exact time to commence, as the seasons and circumstances vary, and the housewife should adapt herself to the conditions.

The golden rule in housecleaning is to make it as little burdensome as possible; and not to turn the whole house upside down at once. Leave some rooms undisturbed while others are being cleaned, so that there will be a place in which to live comfortably, and rest in at times, during the whole process of renovation.

Having made ready and planned for the work, the best time to begin usually is on Monday morning. This comes after the Sunday rest, and one feels more like beginning a new campaign at that time. Try and do the work, however, on pleasant days, when things can be set out doors and well aired, and the windows thrown open freely.

There is no doubt that the orthodox way for cleaning a house is to begin at the top and work down, sending all the dirt and dust to the lower regions as the work goes on; but this is not always convenient, and it is often best to clean certain rooms during the absence of the occupants. We prefer to begin with the cellar. That is too often neglected till the last, and then, when all tired out, it is hastily and imperfectly done. There is really no room in the house more important to the health and well being of the family. Clean out all vegetable matter with the utmost care, move boxes, barrels, etc., and clean under them, and whitewash the walls, having plenty of copperas in the whitewash used. (See our article on the cellar for further hints about its management.) Then go to the attic. Ventilate it thoroughly, and remove all papers or other rubbish. Clean every part thoroughly, sweeping overhead, and then washing the woodwork, windows, etc. Go through the miscellaneous collections and throw away or give away what you do not need.

If there are any signs of moths take prompt action. They will probably be found in the cracks of the floor. Benzine sprinkled along the cracks and crevices is sure death to them. The smell will soon evaporate, but on account of its great inflammability it must be used with great caution, and never at all near a light or fire. Then, having washed the floor (in washing floors in any of the upper stories be careful not to let water run through the cracks to injure the ceilings below) and cleaned down the steps, you are ready for the bedrooms. If the closets are cleaned out first they will be very convenient to store things in while cleaning the rooms. If carbolic acid is put in the water used to rinse the floors, walls, etc., it will kill all bugs or insects. The smell will soon disappear, and it will leave the floor and walls fresh and sweet. In fact, the more general use of carbolic acid water would be a great gain to most housekeepers. It is an excellent disinfectant. A 5% solution is strong enough for this purpose. Wash the floors, etc., first, and then rinse them off with the carbolized water.

Now clear everything out of the bedroom which can possibly be taken out, and have all dust brushed off the tops of doors, windows, ceiling, walls, and every possible lurking place, whether there is to be painting, papering, and whitewashing done or not. Then thoroughly brush and examine the mattresses and beds, and move them out of the room. No matter how clean the bedstead may look, take it to pieces and examine it carefully. In these days, when people travel and visit so much, insect pests may be brought into the cleanest houses, and constant watchfulness is necessary. If there is the least sign of the presence of any unwelcome visitors, use freely some exterminator which will finish them. It will not be enough to treat the bed and the bedstead alone, if their presence is found, for they will also infest the baseboards, floor and walls. After taking up the carpets it is a good plan to wash the floor with alum, borax or carbolic acid water, and to sprinkle powdered alum, borax or cayenne pepper on the floor before putting down the carpet, as these are much disliked by moths and will tend to keep them away. Lay down the carpet, turn back the edges, and sprinkle whichever you use along or under the edge of the carpet; then turn it back and tack it down.

The same plan can be pursued in other rooms. The best methods of cleaning carpets, furniture, pictures, etc., are so fully treated elsewhere that we need not further discuss them here. Having cleaned the bedrooms, the halls can be cleaned next, and then the parlors, sitting and dining rooms, halls and kitchen. The best methods of cleaning all the different articles found in the home are fully explained in their appropriate places in these pages, and the housewife can easily refer to those articles for more detailed information.

Having cleaned the house, the yards and sheds should receive attention. Gather up and burn all refuse that will burn, and remove or bury what will not; and leave no foul corners untouched. Plow up or disinfect all spots where refuse heaps have stood. Sprinkle chloride of lime in all damp places, and dry them out if possible. The germs of many diseases may thus be killed, and much sickness avoided.

Finally, do not make yourself sick by overwork. Take some time for rest as you go along; plan your work carefully, and then when all is done you will not be completely exhausted and worn out. Your own health and comfort during the process should be considered, and the work made as easy as possible.

Dusting.—Where does all the dust come from? is a question frequently asked. In all our cities and towns the quantity of dust seems to be unlimited—it seems to be an ever increasing product of our civilization. But much of the dust is never really gotten rid of. Miss Florence Nightingale has very sensibly remarked that “no particle of dust is ever, or can ever be, removed or really got rid of by the present way of dusting (with feather dusters). Dusting, in these days, means nothing but flapping the dust from one part of a room to another, with doors and windows closed. What you do it for, I cannot think. You had much better leave the dust alone, if you are not going to take it away altogether; for from the time the room begins to be a room, up to the time when it ceases to be one, no one atom of dust can ever actually leave it thus. To dust, as it is now practiced, really means to distribute the dust more evenly over the room.”

A layer of dust is always unwholesome, and when penetrated by dampness it ferments, decays and becomes positively poisonous; especially is this true in damp weather, and in those rooms not dried out by a good fire. Certainly, for both health and comfort, the rooms can not be kept too free from any deposit of dust. But this can not be done effectually with the feather duster. Bid farewell to the dear old relic, and supplant it with the damp cloth. Cheese cloth makes the best duster. There is a wide meshed kind suitable for the purpose which is as soft as silk, and is cheap. It should be so slightly moistened as to hold no suggestion of wet, and it will gather up and hold the dirt, not throw it out to float in the air and light elsewhere. Go all around the room with this, omitting nothing. Wipe over the backs of chairs and table legs, clean out open-worked carving, and wipe in all out-of-the-way places. A small paint brush may be used to clean out cracks, crevices, etc., and those only. Lift small articles off the table and dust under them, instead of wiping around them. Dust the walls and ceilings with canton flannel, nap outside, and tied over a broom, or better, around the mop of a long handled window brush.

If the rooms of the house are swept as we have elsewhere explained, and dusted in this manner, nine-tenths of the ever troublesome dust will be got rid of (exterminated, not scattered) and the rooms will have a delightfully fresh, clean and wholesome appearance. It may seem like a little more trouble at first, but when the rooms are once cleared from dust there will be no desire to return to the old methods.

THE BEDROOM AND BEDS.

The Bedroom.—If a house is well built, suitably located, and free from dampness, a bedroom may be on the ground floor, although as a rule one of the upper floors is better. It has been well said that “a bedroom should be deaf to noise, and blind to light.” It is not always possible to attain this, but it is the object to aim at. The glare of a sunny room may be modified by linen curtains, and a baize covering to the door will deaden sound. The room should be well ventilated, and yet free from draughts. The windows should open from the top, and there should be a fireplace in the room if possible. A painted and varnished wall is doubtless the best. It is non-absorbent, and is easily cleaned. If papered, let the design be free from any pronounced figures or striking patterns, which, in the half-lights of the night or early morning, will suggest to the tired brain weird figures or mathematical problems. A bedroom should be light, rather than dark, and the furniture and general wood work, such as the doors, wainscoatings, etc., should be of light colors. The latter should be varnished so that it can be easily washed and cleaned.

On the ground of health, wood carpeting, or a waxed, or stained and varnished wood floor, is doubtless the best. Such a floor is non-absorbent, and can be wiped clean every day. Rugs can be placed around, on which to step to relieve one from the unpleasant sensation of stepping on a cold floor, and are easily taken out and cleaned. Mattings make very desirable floor coverings for bedrooms.

They are free from dust, can be easily cleaned, and will wear for several years. They should be taken up, the floor scrubbed, and the matting cleaned at least twice a year. In carpets, light colors and small figures make the most desirable patterns for bedrooms. One advantage to a wholly carpeted floor is that the carpet tends to keep out draughts, and make the room generally warmer.

The Bed.—The bedstead should be long enough for a tall person to stretch out in comfortably (say 6½ feet long) for a short bed is extremely uncomfortable. It should be easily taken apart, and the springs so arranged that they can be taken out easily and brushed. The bedstead should not face the window, nor should it be exposed to draughts from the chimney.

The feather bed is both enervating and luxurious. It may do for the old and infirm, but is not suited to the young and vigorous. A good hair mattress laid on elastic springs is the best bed. A light mattress of this kind on the woven wire springs, is well exposed to the air, and, hence, the most healthy. Wool mattresses are less expensive than those made of hair, and also not as good. The same can be said of Spanish moss. Oat straw and corn husks make good under beds, and they are cheap and easily renewed. It is an excellent idea to have mattresses entirely covered with slips of unbleached calico which can be taken off and washed. Such a cover preserves the tick, and it looks fresh and clean. Soft woolen blankets are the best covering for a bed.

In comforters, those made of delaines are best, with wool quilted in. Cotton comforters should be exposed to the sun and air frequently; they are not so good as those of wool. All bedding, however, should be regularly and frequently aired. Each person in the house should open the window and turn down the bedding before leaving his or her room in the morning. This will give the bed a chance to air before it is made up—a point of much more importance than many people imagine.

Every bed ought to be well aired every day. Few people realize the amount of effete and poisonous matter thrown off through the pores of the skin by insensible perspiration. It varies, more being thrown off during violent exercise than when at rest, but from 1½ to 4 or 5 lbs. a day are thus thrown out. This, at night, is confined by and partially absorbed in the bed clothes, and the importance of daily opening out and thoroughly airing the bed clothes so that they may be cleared from this poisonous matter should be evident.

Some mothers teach children to fold up and put away their night-garments before leaving the bedroom. A much better plan would be to instruct them to spread out those garments so that they would be thoroughly aired. Every 2 or 3 days the bedding should be taken apart and well aired. Pillows also should be shaken up and exposed to the wind.

To detect dampness in a bed, warm it, and then place a hand-mirror under the coverings. If a mist is observable on the mirror, and the vapor is condensed into drops, it is a sure sign of the presence of damp.

No one should ever sleep in a damp bed—it is far better to sit up all night. As sleeping in a damp bed so seriously endangers the health, so simple an expedient as the foregoing for detecting dampness is important to know.

Spare beds, before being occupied by a guest, or any one else, should be thoroughly aired and dried. Beds left unused for some time, often gather dampness which will be dangerous to the health; therefore open up the bed, air it and dry it, before allowing it to be occupied. In drying it a jug of hot water or warming pan will be useful or better yet, lift it off and place before a good fire, turning it several times. Change the sheets also.

When bedsteads creak at each movement of the occupant, they can usually be completely silenced by taking out the slats and wrapping the ends in soft paper.

Insects.—Eternal vigilance is the price of freedom from those insects so troublesome to housekeepers. Every spring the bedstead should be taken to pieces and carefully examined to see that no bugs are present. The best methods of exterminating them are explained under "Insect Pests."

Hints.—A well ventilated bedroom at night will cure the difficulty which some people have in waking up in the morning. when they struggle, yawn, relapse, and find it so hard to wake up. The value of thorough ventilation at night in a bedroom can hardly be over-estimated, and the loss without it is always very great.

A pail of cold fresh water left uncovered in a bedroom at night will absorb

all poisonous gases. See what we say about the absorbing power of water elsewhere under "Water."

Emptying Slops.—Slop pails which are neglected soon become foul. An excellent rule, adopted by some, is to scrub them out every wash day with the soapy water left from washing. They should be kept scrupulously clean, and occasionally washed with chloride of lime or other disinfectant. The lids, as well as the pails, should receive attention, and when not in use should be hung above the pail, and not placed on it, thus allowing the pail to ventilate. The one who empties the slops should have a jug of hot water in which a little soda has been dissolved, and 2 dry cloths—1 for the basins and 1 for the chambers. The chambers should be scalded and dried every day. The cloth used for the purpose should be invariably rinsed well after use, and hung in the air to dry. The slop pails should be scalded after use, wiped dry, and kept where they can be well aired.

VENTILATION.

It is only within the last few years that the paramount importance of pure air has been understood. The effect of impure air on animals is at once apparent. For years the more delicate animals in the British Zoological gardens died quickly, it was supposed because of the cold climate. Their cells were then carefully warmed, and to every one's surprise the mortality was even greater than before. At last the cells were well ventilated, and the excessive mortality either ceased, or greatly diminished. There are 2 objects in ventilation: (1) To get rid of the carbonic acid gas exhaled from the lungs, which is poisonous; and, (2) to furnish them an abundance of life-supporting oxygen. To be kept in full health and vigor each adult individual requires 3,000 cubic feet of fresh air every hour. A simple test for the presence of carbonic acid gas is given below, in discussing the purity of air. The thing to be aimed at is to change the air steadily without creating a draft, for drafts will give rise to colds, rheumatism, etc., but far more complaints are caused by insufficient than by over ventilation.

The attempt to make our houses as nearly air tight as possible in winter, by the use of double windows and other devices, is a suicidal policy unless ample provision is made for ventilation in other ways. It makes the inmates delicate and susceptible to the slightest change. They would be far healthier living as our ancestors did in an old log hut. The quality of the air we breathe is quite as important as that of the food we eat.

A great deal more attention ought to be given to this matter of ventilation than has been done in the past. In building new houses it should be carefully planned for; for the ventilation of old houses we can only offer a few hints. A fire in an open fireplace is a fairly good ventilator, and in dwelling rooms, and especially in bedrooms, the fireplace should always be left unclosed, and the flue or damper open for ventilation. A ready way to ventilate a room is to fasten a neat strip of wood an inch or two wide to the window sill, and extending clear across the window. Fasten a piece of "weather-strip" on top of this strip, so that it will form an air tight joint with the lower sash. In this way the lower sash can be raised 1 or 2 inches without letting in any air at the bottom of the window, but an opening will be formed at the top between the 2 window sashes through which a current of fresh air will flow. If a piece of wood or tin be attached to the top of the upper sash, sloping upwards, the current will be directed toward the ceiling, whence it will diffuse itself through the room. To ventilate a room do not rely on getting the air from halls or other rooms, but introduce it directly from the outside.

A ready way to ventilate rooms which are much occupied, is to open the windows during the meal time, and before they are needed again they can be rewarmed. The improvement in the air will be very noticeable.

Have the bedroom well ventilated always, and if no other provision is made leave the window down 2 or 3 inches at the top. Place the bed where the draft will not strike it, and if there is more than one window open the one the farthest from the bed. If necessary, the curtains may be drawn to prevent the draft from striking the bed. More air will be needed when several people occupy the same apartment than when there is only one. If in the morning the room smells close

to any one who steps into it from the fresh outside air, it is a good practical test that the ventilation is insufficient; but if no smell is perceptible the ventilation is good. On completing the morning ablutions throw the window wide open and leave it so, to thoroughly ventilate the room.

Importance of Sunlight.—Another important matter is to admit the sunlight, *floods of it*, into all the rooms of the house if possible. Even if it fades the carpets, a little of that is better than to shut it out and have the cheeks of the children fade. An abundance of fresh air and sunlight will save many a doctor's bill, and what is vastly more important, they will preserve the health of the family.

Cooling the Air.—In hot weather wetting a cloth and hanging it in the window over the blind will cool and freshen the air greatly—almost as much as a shower. A large sponge hung in a room and kept continually wet will also cool the air, either in the day or night.

Impurities in the Air.—The principal contaminations of air are the presence of poisonous gases due to sewers, etc., and the presence of carbonic acid gas in excess. Wholesome air does not contain above 5 volumes of carbonic acid in 10,000; as the proportion increases the quality of the air deteriorates, until it becomes positively poisonous. *Tests.* The simplest method of testing the amount of carbonic acid present in the air is by using lime-water. This can be obtained of any druggist, but should be freshly made. When this lime-water is shaken up in a bottle of air containing carbonic acid, the acid combines with the lime, forming an insoluble powder of carbonate of lime, and when this is in sufficient quantity it makes the water turbid or milky, so that it can be recognized by the eye. The test is made by having a series of bottles of various sizes, filling them with the air to be tested, placing a large tablespoon of the lime-water in each one, corking tightly, and then shaking them vigorously for 3 or 4 minutes, so that all the air in the bottle shall be brought in contact with the lime-water, and all the carbonic acid taken up by the lime. In bottles of large size the fluid will become dense, while in those of small size it will remain clear. If a 10 oz. bottle, thus shaken becomes turbid it indicates the presence of more than 6 volumes of carbonic acid per 10,000 of air; while turbidity in an 8 oz. bottle indicates more than 8 volumes; in a 6 oz. bottle more than 11 volumes; and in a 4 oz. bottle more than 15 volumes. Anything over 5 volumes should be corrected. There is no test paper which can be made practically useful to indicate the quantity of carbonic acid in the air.

Pure air is so very essential to health that impure air should never be breathed when possible to avoid it.

Sewer gas is usually manifested by its peculiar cabbage like odor. The following is, however, a ready test for it: Saturate unglazed or blotting paper with a solution made of 1 oz. pure lead acetate, in $\frac{1}{2}$ pint of rain water; let it partially dry and then expose it in the room suspected of containing sewer gas. The test paper will be blackened if any considerable quantity is present. Never neglect escaping sewer gas; if present, find the leak and stop it at once. For a test for leaking sewer pipes see "Sinks and Drains."

DISINFECTANTS AND DEODORIZERS.

The importance and value of disinfection is becoming more apparent every year, and all housekeepers should know something about the various articles employed for this purpose, their value, and the uses to which they are adapted. We mention below the more important ones and explain their different merits. It should be remembered, however, that nothing will take the place of those best of all disinfectants, sunlight, fresh air, soap and water, and perfect cleanliness. Popularly the word disinfectant is used in a very loose way. Any articles which destroy bad odors, or which arrest decomposition or putrefaction are generally called disinfectants, and are often ignorantly used to destroy the disease germs of small-pox, cholera, etc. It should be understood that many valuable deodorizers and antiseptics are utterly valueless for destroying disease germs. Strictly speaking *disinfectants* are agents which destroy the germs of communicable diseases, such as cholera, small-pox, etc. *Antiseptics* are drugs, which destroy low forms of life like the bacteria which cause decomposition. *Deodorizers* or *deodorants* are agents which destroy disagreeable smells merely.

Among the best of the true disinfectants are fire; boiling water; steam (it should have at least 25 lbs. pressure); a solution of chloride of lime; bichloride of mercury (corrosive sublimate); a solution of chlorinated soda (Labarraque's solution). Others which are useful where spores are absent are dry heat (as high as 240° F.); chloride of zinc; sulphate of copper; carbolic acid. Remember in using any disinfectant that the time of exposure to its action is important, so allow it time to work.

Heat and Steam. Heat is a powerful disinfectant. *Fire*, of course, destroys all germs, and articles of small value are often best burned when soiled with infectious material. *Steam* unconfined is the same as boiling water (212°), but under pressure it is much higher, being 240° F. at 25 lbs. pressure, and 250° at 30 lbs. pressure. Exposure for 30 minutes to steam at 25 lbs. pressure will destroy all known germs. Dry heat penetrates slowly into bulky articles such as bedding, mattresses, etc. If spores are present heat enough to injure woolen fabrics is needed to kill them; if they are absent, a 2 hours' exposure to a dry heat of 230° F. is effectual. A suitable oven is needed. Steam is suitable for articles like blankets, carpets, clothing, etc., which will not bear boiling, but is not suited for articles like leather, etc., which are injured by moisture.

Boiling in water for $\frac{1}{2}$ hour will destroy the vitality of all known disease germs. It is therefore the best means for disinfecting all articles which can be thus treated, such as bed-clothes, towels, the body clothing of the sick, etc. If there are no facilities for treating articles with boiling water in the sickroom, they may with safety be removed to another part of the house for this treatment if they are first carefully enveloped in a towel or sheet, as the case may require, which has been thoroughly soaked with carbolic acid solution. Thus enveloped, they should be put in the water, and boiled for $\frac{1}{2}$ hour.

Carbolic Acid.—This is one of the best known disinfectants. It is made from coal-tar. It is really a solid, but the least addition of water liquifies it. The genuine acid is easily recognized by its powerful and characteristic odor. For disinfecting cellars, sewers, sinks, water-closets, etc., use 1 oz. of the acid to a gallon of water. For steeping clothes and general disinfecting purposes it is excellent. For such articles 1 part in 20 of water will answer. Dr. Koch gives it the first place for disinfecting clothing, excreta, etc., in cholera. A 1% or 2% solution is effective for many germs. Carbolic acid soap is well adapted for disinfecting the hands. The only objections to carbolic acid are that its odor is not very pleasant, and that it is a deadly poison. It is also somewhat more expensive than some of the other disinfectants. Carbolic acid when combined with water and boiled, evaporates with the steam in a constant ratio, the steam containing the same relative quantity of the acid as the water from which it evaporates.

Charcoal.—This is useful within limits. It absorbs impure gases, and also oxygen which decomposes them. It is not volatile and cannot go to the smells—they must come to it—and it cannot penetrate every nook and corner as a good disinfectant should do. It can only absorb a limited amount of gas, and after a time it must be removed and fresh supplied; or it may be purified by heating in an oven. It preserves meat and poultry, makes a good tooth-powder, is given for indigestion, and is also used as a poultice for foul ulcers. It is a useful article to keep in the house.

Chloride of Lime (also called Bleaching Powder).—This is one of the cheapest and best disinfectants. For urinals, drains, closets, etc., there is nothing better. The right strength for use in sinks, closets, etc., is 1 lb. to a gallon of water. For steeping linen 1 oz. to the gallon is strong enough, and even in this weak solution the linen must not be left long. It decomposes on coming in contact with organic matter, and as a disinfectant it acts by giving off chlorine gas, which destroys all known germs. The smell is not pleasant, although many people do not dislike it. The powder is also scattered about freely where required in yards, etc., but as the odor will ruin the flavor of foods it must be used cautiously about the house, especially in the cellar, larder, etc., where food is stored. A mixture of 1 part chloride of lime with 8 parts dry sand answers well for cess-pools, etc. To make an effective disinfectant it should be of the best quality. When purchasing, accept only that which is inclosed in glass bottles, as, when packed in paper or wooden boxes it is liable to have so deteriorated as to be worthless for disinfecting purposes. Dissolved in water (8 oz. to 1 gal.) it may be

used in disinfecting discharges in contagious diseases, especially in typhoid fever and cholera; 1 quart should be mixed with each discharge (it will be best to put it in the vessel before it receives the discharges); after 30 minutes, disinfection is completed, and the contents may be thrown into the water-closet; the expectorations of those sick with consumption may be discharged into a cup half filled with this, or carbolic acid solution.

A home-made chloride of lime may be prepared by dissolving a bushel of salt in a barrel of water; then slack a barrel of lime with this salt water—it should be thick enough to form a kind of paste. This will answer for disinfecting purposes about as well as that bought at the stores, and may be used freely about cellars, sinks, outhouses, etc.

Chloride of Zinc.—This is the basis of *Burnettes' Disinfecting fluid*. It is poisonous, but is a well-known disinfectant and deodorizer. It is not expensive. The strength for general use is about a wineglassful to $2\frac{1}{2}$ quarts of water. It is useful for chamber utensils, water-closets, etc. Its powers for destroying disease germs has been much overestimated, although it has been extensively used in Europe and America. It is a valuable antiseptic and deodorizer.

Condy's Fluid.—This is an old disinfectant which has been on the market for years. There are 2 kinds, the crimson and the green. The crimson is best. It needs to be used in large quantities and is somewhat expensive. It stains linen, but the stains may be removed by steeping the articles, before they get dry, in water containing 1 oz. of sorrel to the pint. It is made from *permanganate of potassium*. By dissolving 1 oz. of permanganate of potassium in 1 quart of water, a stronger disinfectant is obtained at a less price. It is a powerful oxydizing agent, and is used in fevers, etc.

Corrosive Sublimate (called also *Perchloride* or *Bichloride of Mercury* and *Mercuric Chloride*).—This is a most valuable disinfectant, the greatest objection to its use being that it is extremely poisonous. It decomposes on contact with tin, copper, or lead. It is colorless and odorless, and if kept on hand it should be plainly labeled, and it will be a good plan to color it by adding indigo or aniline blue. It coagulates albuminous materials, which somewhat interferes with its value as a disinfectant.

The concentrated solution has 4 oz. mercury to 1 gallon of water. It has much potency at 1 part sublimate to 500 parts water, or even at 4000 parts water. An excellent solution for general use is $\frac{1}{4}$ lb. corrosive sublimate and 1 lb. sulphate of copper to 1 gallon of water. This we will call "Solution 1." For excremental discharges put 1 lb. (i. e., 2 cups) of "solution 1" in a gallon of water, and use 1 quart of this for each discharge, putting it in the vessel before the discharge takes place, and letting it stand 2 hours before emptying. Privy vaults which contain so much material, believed to be infected with the germs of typhoid fever or cholera, that the disinfection by chloride of lime would be impracticable, may be disinfected by using 1 oz. of sublimate to 1 gallon of water, which will disinfect 4 gallons of infected excremental matter.

The time of contact is important, so let it act for 2 or 3 hours. It is an antiseptic at 1 part sublimate to 15,000 parts water. Corrosive sublimate if allowed to come in contact with lead pipes will make them brittle and worthless. It should be kept in glass or glazed vessels.

Sanitas.—This is a disinfectant made by the action of super-heated steam on turpentine. It is largely used on board ship and is popular on account of its pleasant odor. It is not very powerful, and must be used in large quantities.

Solution of Chlorinated Soda.—This to be effective should contain at least 3% of available chlorine. When exposed to the air it evolves chlorine, to which circumstance its special value is due. It is sometimes spoken of as *Labarraque's solution*. If 1 part of the solution of chlorinated soda is added to 5 parts water it makes a standard solution, and may be used for the same purposes as chloride of lime; its odor is somewhat pleasanter although it is more expensive. It may be used to cleanse portions of the body soiled with discharges of those sick with contagious diseases, or the hands of attendants similarly soiled. It does not keep well, so it should be fresh when used.

Sulphate of Copper (also called *Blue Vitriol*).—This is not so good a disinfectant as bichloride of mercury, but it is a better deodorant. A 10% solution is valuable for destroying micro-organisms where spores are absent.

Sulphate of Iron (or Green Copperas).—The right strength for ordinary purposes is 1 lb. to a gallon of water. A mixture of sulphate of iron and sulphate of zinc is sold under the name of *Larnande's Mixture*. Strictly speaking sulphate of iron is not a disinfectant as it will not destroy the vitality of disease germs, but it is a valuable antiseptic and arrests putrefactive decomposition. It is cheap and is valuable for sinks, drains, closets, etc. *Copperas* is not an effective remedy against the spread of contagious diseases, like true disinfectants, its most valuable applications being those already indicated.

Sulphate of Zinc.—This is commonly called *white vitriol*, and is obtained by dissolving zinc in dilute sulphuric acid. For purposes of disinfection dissolve $1\frac{1}{2}$ lbs. of the sulphate of zinc and $\frac{3}{4}$ lb. of common salt in 6 gallons of water. Useful for water-closets, etc.

Sulphurous Acid Gas (also called Sulphur Dioxide).—This is a useful disinfectant and is always available. It is made by burning sulphur. Its disinfecting power is much increased by the presence of moisture. A room or a house may be filled with the gas so that every article is subject to its influence. It escapes more readily than is generally supposed, through every crack and crevice, and infectious material enclosed in bundles, or protected by the folds of blankets, etc., may escape disinfection unless care is taken. It quickly rusts brass and iron work and tarnishes picture frames, silverware, etc., but this can be guarded against by removing them from the room. It is valuable for disinfecting after smallpox, scarlet fever, yellow fever, diphtheria, etc.

Thymol.—This is a comparatively new antiseptic obtained from the juice of several aromatic plants, and its odor is pleasant. It is sold in crystals which are freely soluble in water, or the spirits of thymol may be bought. It is very active, may be used for the same disinfectant purposes as carbolic acid, and is quite as effective, and its pleasant odor commends it. Use about 1 teaspoon of the spirits of thymol to 2 quarts of water.

A Saturated Solution of Chloride of Lead.—This makes an excellent antiseptic and deodorant, and may easily be prepared as follows: Dissolve $\frac{1}{2}$ drachm of nitrate of lead in 1 pint of boiling water; also dissolve 2 drachms of common salt in a pail of cold water; when dissolved, mix the 2 together; when settled, a pail of clear fluid will remain. It is without smell, and may be used to disinfect water-closets, heaps of refuse, drains, sinks, decaying and offensive objects, etc.; the fetid atmosphere in a room may be sweetened at once by hanging up cloths saturated with the solution. If used hot the mixture is more active. It is quite cheap, as a number of barrels of the solution may be prepared from a single pound of the nitrate.

Privies, Yards, Etc.—Eckstein, after extensive experiments, found that the most effective disinfectant for urinals, privies, etc., was chloride of lime (bleaching powder). Its odor is unpleasant to many, and for common use (when contagious diseases are not present) copperas or carbolic acid answer well. Cellars, yards, stables, gutters, privies, cesspools, water-closets, drains, sewers, etc., should be frequently and liberally treated with chloride of lime or copperas (sulphate of iron) solution. Another good solution for this purpose is the chloride of lead previously mentioned. After contagious diseases like typhoid fever, cholera, etc., use chloride of lime or bichloride of mercury, as at such times the most powerful disinfectants should be used.

The best way to disinfect a room after any contagious disease, is to burn sulphur. Mix equal quantities of sulphur and charcoal, and paste strips of paper over all key holes and cracks about the doors, windows, etc. Put a dish-pan on the floor, a plate in the pan, and on this set a kettle containing the sulphur mixture. Use about 6 lbs. for a room 12x15 feet, and 10 feet high, and in that ratio for other sized rooms. If too little sulphur is used it will do no good. Then fill the pan half full of water, pour about 3 oz. of alcohol over the sulphur, set fire to it, and get out of the room at once, closing the door tightly. Leave it closed 24 hours; the burning sulphur generates sulphurous acid gas, which is a powerful disinfectant. Then open the room and air it 24 hours, and the windows should be left open as much as possible for a week or two. It will be best to repaint the woodwork, and repaper or kalsomine the walls. Wash the woodwork of furniture, etc., with a 2 per cent. solution of chloride of lime or carbolic acid.

If the carpet was left on the floor during the illness it should remain until after the fumigation; then take it up, beat it, and leave it out of doors for a week or two. Those who wish to be on the safe side can repeat the fumigation a second time.

For disinfecting clothing, bedding, etc., during an attack of a contagious disease, or after recovery, the following suggestions are offered: Articles of little value should be destroyed by fire. All clothing, bedding, etc., which can be boiled in water should be so treated for 1 hour. Other articles may be immersed in a solution of 2 ounces (= 1 wineglass) of corrosive sublimate "solution 1" (see corrosive sublimate) in 1 gallon of water, which does not injure cloth. Garments of wool, silk, etc., which would be injured by immersion in boiling water or a disinfecting solution, may be exposed to dry heat at a temperature of 230° F. for 2 hours, or exposed to the fumes of steam under pressure as previously explained. The ticking of beds and pillows should be dipped in the bichloride of mercury solution and then thoroughly boiled. All straw, husk, or excelsior filling should be burned. A filling of hair or feathers should be thoroughly baked in an oven or destroyed by fire. Articles exposed to dry heat or steam should be spread out so that all parts can be readily penetrated. Articles of wood, leather, porcelain or metal may be washed several times in a 3% solution of carbolic acid, or a 2% solution of chloride of lime.

The hands and general surface of the body of the attendants and of convalecents may be washed with Labarraque's solution, or with a 2% solution of carbolic acid. The excreta or discharges from the patient should be treated with 1 quart of a 5% solution of chloride of lime or a 5% solution of carbolic acid, or use corrosive sublimate "solution 1" in the cases and as explained in our previous section on that disinfectant. Articles which are to be disinfected by fire or boiling outside of the room should be wrapped in a sheet soaked with a solution of carbolic acid and thus conveyed to the place of disinfection. During an illness, or on recovery, the body of a patient may be sponged (with the physician's approval) with a solution of 1 part chlorinated soda in 20 parts water, which will aid in preventing the escape from the body of infectious material. It will be a good idea to daily wipe off all surfaces (furniture, walls and floor) with a cloth moistened with a 2% solution of chloride of lime or carbolic acid.

Deodorizers.—These should not be confounded with disinfectants, but in the minds of many people the difference is not clearly understood. Deodorizers merely mask odors by using perfumes, etc., but they do not destroy the poisonous effluvia and disease germs. Unpleasant odors may be masked by burning sugar, resin or vinegar. Every housewife has seen rags and paper burned for this purpose. Carbolic acid sprinkled about, or exposed in saucers or open vessels, acts as both deodorizer and disinfectant, and so does the saturated solution of chloride of lead. "Florida Water" is refreshing in a sickroom, but it has no very active disinfecting properties. Pinol, sprayed through an atomizer, is a fair aerial disinfectant, having an agreeable odor.

The fumes of newly roasted coffee is one of the best things with which to mask unpleasant odors. Even musk, asafetida and castoreum, may be overcome with it. Place a few ounces of whole coffee in an iron pan over the fire, or on a shovel of coals, and while the fumes are rising carry it around the room; it is effectual.

A good deodorizer for a sickroom is vinegar boiled with myrrh; sprinkle it on the floor and furniture. Another is to place in a saucer a little coffee freshly ground; put a piece of camphor gum in the center and set fire to it, letting both coffee and camphor burn together. This is both cheaper, and better than pastiles.

FLOORS AND FLOOR COVERINGS.

Wood Floors.—Paints like yellow ochre, sienna, Venetian or Indian red, which contain mineral colors alone, without any white lead, are the best to use on floors, and the common practice of painting kitchen floors with yellow ochre, raw umber or sienna is a very wise one. Although they have little body, as compared with white lead paints, and several coats are needed, such paints make an excellent and durable covering. Any color containing white lead is injurious to wood

floors, making them softer and more quickly worn away. Any varnish made by drying lead salts, when applied to a wood floor is nearly as injurious as lead paint.

Cleaning White Board Floors.—To keep boards white it is necessary to wash them properly. Very often boards which are unpleasantly dark have had a good deal of work bestowed on them, but it has not been applied right. The method adopted is quite as important as the material used for scrubbing boards. It is not only necessary to scrub the dirt out of the wood, but it is quite as important to remove the dirt thus loosened; and for this, plenty of clean water is required. To loosen the dirt and then rub it in again by wiping with a nearly dry cloth, is a great waste of effort. Flannel is best to use because it takes up the dirt, which cotton does not. Remember, then, that to rinse thoroughly, and 2 or 3 times if necessary, is, if anything, even more important than to scrub well. The great secret of floor washing is to do a little at a time, change the water often, and use plenty of it; then dry the floor with a flannel cloth. Sweep the floor, of course, before washing it.

Removing Stains.—The following, if applied as directed, will take out stains: Take some clean, sifted, white or silver sand, and scatter it on the floor. Dissolve 1 lb. of potash in 1 pint of water, and sprinkle the sand with the solution. Have a pail of very hot water, and well scrub the boards lengthwise with a hard brush, and use the best mottled soap. Change the water frequently.

The frequent use of soap on wood floors, or any articles of wood, darkens them and spoils their color. A mixture of 1 part newly slacked lime, and 3 parts common white sand, is cheaper and much better than soap. It will remove grease, whiten the boards, and destroy all insects. Rinse well with clean water afterwards. In washing boards never rub crossways, but always up and down with the grain.

Sand will roughen boards on which it is used unless it is very fine. For this reason *fine wood ashes* sifted through a cheese-cloth bag is better. *Soda* keeps wood whiter than soap, and is therefore better to use as a rule.

Floors which are in bad condition may be washed with the following: Put into a sauce-pan 1 lb. soft soap, 1 lb. of fuller's earth, 1 lb. of soda, and 2 quarts of water. Boil all down together to $\frac{1}{2}$ the quantity. Scrub well with it, and rinse thoroughly after scrubbing.

To Clean and Restore Wood Floors.—The following will be found useful in cleaning and restoring color to wooden floors: Allow 1 part calcinated soda to stand $\frac{3}{4}$ hour in 1 part slacked lime; then add 15 parts water, and boil. Spread the solution thus obtained upon the floor with a rag, and after drying, rub with a hard brush and fine sand and water. A solution of 1 part concentrated sulphuric acid and 8 parts water will enliven the wood after the first application. When dry, wash the floor, and wax it if desired.

For Scrubbing White Floors, one of the best sands (possibly the best) is to heat marble chippings red hot in the fire; then let them cool and pound them very fine.

Unpainted dining-room floors, etc., can be freshened and cleaned nicely by rubbing with fine dry sand, or with sawdust, which is better, as described further on for using sawdust.

A smooth hard-wood dining-room floor may be kept in condition by rubbing or dusting it every day with a woolen cloth; if it is fastened to a long handle like a mop, it will be easier, as it will save stooping. Lint is very apt to be left by linen or cotton cloths. Then give it a dry sawdust rub once a week.

Hot grease spilled on a wood floor should have cold water thrown on it at once, to harden it and prevent its striking into the wood.

For musty floors, take an old broom and scrub on a strong hot solution of chloride of lime. First scrub them clean, however, before applying the solution.

Marks of whitewash can be removed by scrubbing well with soap and water.

For grease or oil stains take $\frac{1}{4}$ lb. fuller's earth and $\frac{1}{4}$ lb. pearlsh, and make a paste with about 1 quart boiling water; while hot, spread it on the greased surface, allowing it to remain 10 or 15 hours or more. Then scour off with clean water, using sand if necessary. If the grease stains are very numerous, and the floor very dirty, it may be spread all over the floor, and left on 24

hours before washing off. Or, old grease stains may be softened by soaking them with turpentine, and then scraped off.

Ink spots on floors may be removed by scouring them well with sand wet with water, and a little oil of vitriol added. Then rinse them with strong saleratus water, or pearlash water. Ink stains may be removed from unpainted boards or wood by using either strong vinegar or salts of lemon. Or, dissolve some oxalic acid in $\frac{1}{2}$ pint of hot water; apply with a rag, tied to a stick; wash off afterwards with soda, soap and water. This will remove many other stains also. A paste of damp chloride of lime will remove ink stains from boards.

Soot stains on a wooden floor or boards can be removed by washing the spot in sulphuric acid and water.

To Stop Cracks in Floors.—(1) Make a paste of 6 quarts of water, 2 lbs. of flour, and 2 tablespoons of alum; boil and mix thoroughly, and then soak newspapers thoroughly in the paste until it is all about the consistency of putty. Force it into the cracks with a suitable knife. It will harden nicely, and be neat and permanent. (2) Dissolve 1 part glue in 16 parts water, and when almost cool stir in a sufficient quantity of sawdust and prepared chalk. (3) Mix plaster of Paris to a paste with water in which glue has been dissolved, as that prevents it from cracking and falling between the boards. It can be colored to match the boards if liked. Mix but little at a time, and keep it warm while using. (4) Use putty.

Waxed Floors.—Never use water on waxed floors. Before waxing, if there are any spots remove them with turpentine or benzine; then wipe perfectly clean with a dry cloth, and apply the preparation of wax, putting on very little, or else it will be sticky. Apply it with a flannel cloth and then rub until it shines like varnish, rubbing with rough flannel or Brussels carpet. With reasonable usage it should then last several months. Any little spot which becomes dim should be rubbed up with flannel.

Well polished wax floors can be rubbed off every morning with a large flannel cloth, which is soaked in kerosene oil every 10 days or 2 weeks. Shake the cloth free from dust, and using a stubby broom or scrubbing brush, rub rapidly up and down with the grain—not across it; the floor will soon assume a polished appearance which dirt and footprints do not easily deface.

Waxed floors which seem sticky and dirty after many waxings and long use should be cleaned with turpentine, but *never use water on a waxed floor.*

Stained floors should be dusted every day, and if desired the preparation of beeswax and turpentine (given further on) can be applied to them, and then they should be treated like any waxed floor.

Cleaning with Sawdust.—If stained or painted floors are washed with water the gloss will soon be injured, besides which more or less moisture is apt to soak in, to their further detriment. It is better to scrub them with dry sawdust. Use that which is dry and clean. Scatter it over a space about a yard square, and then scrub it with a new, stiff scrubbing brush, the same as would be done with water. Use more sawdust and extra rubbing for spots unusually soiled. When the whole floor is gone over sweep up and burn the sawdust, and then dust the floor before laying down mats or rugs. Unpainted or even varnished floors may be treated the same way to advantage.

For Waxing Floors.—Melt 8 oz. beeswax in 1 quart turpentine; as the latter is very inflammable it must be warmed over a slow fire, free from blaze. Apply with clean flannel; then polish with another dry and clean piece.

A Wax Floor Polish.—Take $12\frac{1}{2}$ lbs. yellow wax, rasped, and 6 lbs. pearlash, and boil them in water. Stir well, and when effervescence ceases, add 6 lbs. dry yellow ochre; then pour all into a tin. For use, add 5 pints boiling water; stir well, and apply while hot; polish afterwards with a large brush, and wipe with a coarse woolen cloth.—“*Decorator and Furnisher.*”

A Hard Wood Polish.—Take 1 pint of turpentine, 5 oz. powdered resin, and 24 oz. yellow beeswax. Put them in a pan, set them in a larger pan of hot water, and melt, stirring well till thoroughly mixed. Manage carefully as they are very inflammable. Let it get cold, and if thicker than cream thin down with turpentine. Apply it with a woolen cloth (having the floor clean and dry) and then rub hard with a polishing brush. Finish with soft green baize.

A Floor Varnish.—Take $\frac{1}{2}$ lb. of pure white borate of manganese finely pow-

dered, and add it little by little to a pan containing $2\frac{1}{2}$ lbs. of linseed oil; it must be well stirred and raised to a temperature of 360° Fahr. Heat 25 lbs. of linseed oil in a boiler till ebullition takes place; then add it to the first liquid, increase the heat, and allow it to boil for 20 minutes. Remove from the fire, and filter the solution through a piece of calico. The varnish is then ready for use; 2 coats may be applied. Add a final coat of shellac varnish if a brilliant polish is desired. Make $\frac{1}{2}$ the quantity the same way.

A *black varnish for wood* may be prepared by taking good varnish and mixing in enough ivory black to color it; lay on a thin even coat. Clean it any time by wiping with a woolen cloth dipped in warm water.

Stains for Floors.—A kitchen floor may be stained by taking a lye made from wood ashes and adding enough copperas to give it an oak shade; apply with a brush, and when dry varnish the floor. Or oil the floor with boiled linseed oil, applied with a paint brush; when dry, varnish it. To clean such a floor is much easier than a white one.

A general stain for floors, the color of which can be varied at will, can be prepared as follows: Take 2 parts linseed oil (unboiled) and mix in 1 part turpentine; add a little Japan dryer. This is the foundation, to which add any of the pigments hereafter given to produce the color desired. Stir in enough of the selected pigment to make the whole about as thick as syrup; set it over a moderate fire and bring it to a boil; then, for each quart of the mixture take a lump of yellow beeswax the size of a walnut, and, having melted it, stir it in well; then take from the fire; let it cool 10 minutes, and thin till it runs freely, with turpentine. Lay it on with a good-sized brush, making the strokes the way the grain runs, and apply it freely. When it is thoroughly dry, varnish the floor, adding a gill of unboiled linseed oil to the quart of varnish. Polish afterwards at any time with turpentine and beeswax mixed. A little over a quart of the above mixture will be needed for each 16 square yards of floor. The process is neither difficult nor expensive, and any lady can easily apply it, with a little practice.

The great secret of staining is to properly thin the stain and apply it evenly with a brush. Try a color on a piece of plain board before using it, to make sure the shade is right. Soft woods take a deeper color than hard. Of the pigments which may be used to color the above mixture, Vandyke brown or burnt umber will make a *black walnut stain*. Burnt sienna makes an almost perfect *mahogany stain* if properly thinned. For *cherry*, combine red oxide of lead and burnt sienna. Raw umber makes a good stain for floors, especially for white pine. Raw sienna makes a *yellow stain*. In fact the shades can be combined and varied at pleasure, and several colors can be applied to a single floor, working out figures and pretty designs if desired.

Sizing for Stained Floors.—Take $\frac{1}{2}$ quart of cold water and 1 lb. size, and heat gently till it melts. Do not apply till the stain is fully dry; then use a flat brush to lay it on with. Add a little warm water if it froths while being applied. Do not cover with varnish till fully dry. If you varnish it use the best, and lay it on with a flat brush, freely and evenly. Do not step on it then till it is hard.

Wipe a varnished floor about once a week with a soft cloth wrung out of lukewarm water.

To Ebonize Wood Floors.—In 1 quart of water boil 1 lb. logwood chips until it is colored well. Apply this evenly, giving a second coat to close textured boards. Let it dry, and then apply a strong solution of sulphate of iron in water. A fine black results which can be sized and then waxed or varnished.

Enameling Floors.—This is done by applying several coats of paint, and rubbing the floor down with fine glass paper between each coat. It is best done by a skilled workman.

Oiled Floors.—Heat boiled linseed oil boiling hot; have the floor very clean, and then, using an old paint brush, apply the oil, keeping it hot all the time. It may be colored if desired; 1 tablespoonful of burnt umber to the quart of oil darkens it, while the same quantity of yellow ochre will make it light. A bad floor will require 2 coats; even a very rough floor will be greatly benefited by thus oiling it. It will be often enough in most families to oil a floor twice a year. It can be kept clean by dusting daily, and wiping once a week with a flannel cloth wrung out of warm water. Avoid using soap on it. It may be oil polished by rubbing the oil in with a rubber, and the more it is rubbed the better it will look.

A Yellow Paint for Floors can be made by dissolving 2 oz. of glue in 2 quarts of soft water; then lift from the fire and stir in 2 lbs. of yellow ochre; have the floor clean and dry and apply at once. When dry, lay on a thin coat of boiled linseed oil. Do not walk on it till thoroughly dry.

Hall Floors.—Hardwood or tiles make the best hall floor. Upon this a strip of carpet or a rug should be laid, and if necessary fastened in place with brass rings. If the floor is of natural wood, lightly cover it at first with linseed oil, and have it rubbed smooth and cleaned when dry; then apply a coat of shellac varnish, or polish once a month with beeswax and turpentine. If soft pine is used it will be best to apply several coats of colored varnish.

To Keep Ground Floors Dry.—Spread over the ground, when building, a layer of coal dust crushed fine. Cover it with a layer of sand of equal thickness. On top of this lay the floor. The coal dust absorbs the moisture of the ground, while the sand and floor are kept dry.

Carpets.—*To Sweep.*—For ingrain and short pile carpets scatter tea-leaves (which have first been rinsed in clean water to prevent their staining and are then drained well so that they are damp, not wet) over the carpet; rub them in with the broom first, and then sweep as usual. This will prevent dust and brighten the colors, but the lightest colored carpets may be stained slightly with the tea-leaves; they are best therefore on dark-colored carpets. Old tea-leaves should be kept for this purpose in a pot set apart for them. Squeeze the water out thoroughly with the hand before using them. As a substitute for the tea-leaves, newspapers are sometimes used; put them in water till soft, squeeze dry, and tear up. Another way is to throw on damp salt and then sweep thoroughly; or, sweep first, and then scatter on coarse salt, or dampened Indian meal, and sweep again; or after sweeping put a cup of coarse salt in a large basin of water, and go over the carpet with a clean cloth wet in it. Either of these methods brighten the colors wonderfully. Wiping the carpet thoroughly, after sweeping, with a damp flannel cloth wrung out of warm soapsuds, or water containing ammonia or borax, is also an excellent way to keep it bright. Bran is a good thing to sweep with to keep down the dust. Sweep with a short, sharp stroke, without scattering the dust. No other plan is so good as burning the dirt.

Thick-piled carpets, like Axminster and Turkey, should be swept the way of the pile always. In this way they can be kept clean for years, but if swept any other way the dust will enter the carpet and soon spoil it. Any carpet swept against the grain soon looks rough and battered.

Velvet pile carpets are best swept by using firmly a hard whisk brush, made of cocoanut fiber; once a week wipe them over with a chamois leather dampened with water containing ammonia.

Another plan, enthusiastically advocated by some housekeepers, is to do away with the use of brooms almost altogether. Instead of sweeping they go over the carpet each week with a sponge wet in a pail of warm water containing a little ammonia, and wipe carefully about 2 square feet of surface at a time. The daily litter they clean up with a carpet sweeper. Carpets thus treated last longer and look better, and the dust in the room will be lessened $\frac{3}{4}$ at least; it is better than a bi-weekly sweeping.

To Beat Carpets.—All carpets or rugs should be well beaten and rubbed with a broom before being cleaned. To beat properly, hang them on a stout line, wrong side out. The sticks used should be pliable, with cloth in the form of a knot at the end to prevent tearing the carpet. After well beating the wrong side turn and beat the other in the same way. After the floor has been washed and become thoroughly dry, the carpet can be relaid and then cleaned.

To Clean Carpets with Bullock's Gall.—Use 1 pint to 3 gallons of water, and add 5 oz. pearlsh; mix well. With a brush scrub about 1 square yard of the carpet at a time, as quickly and carefully as possible, and then suck up the gall with a flannel or sponge, which should be frequently rinsed in clean cold water; then dry with clean linen or cotton cloths before beginning another square. Thus proceed until the carpet is finished. For carpets which are not very dirty, or which contain delicate colors, this process is adapted, as it will not soil them. Old gall will smell, but by using fresh gall the odor will disappear in a few hours.

To Clean Carpets with Soap Liquor.—Cut up a bar of soap and dissolve it over a fire in 2 gal. of water. Put 2 quarts of this dissolved soap into a pail of

warm water, add a little ammonia, and wash 1 square yard at a time as directed for the bullock's gall process. In neither case should the liquid be allowed to soak through to the back of the carpet, but apply and wipe it up quickly. Have the floor perfectly dry before the carpet is laid, and keep a fire in the room to expedite the drying. Ingrain, tapestry, Brussels and Turkish carpets are all cleaned the same way, and the secret of the best results is in rinsing them thoroughly without letting them become soaked through.

Process No. 3.—Another good way is to take 1 lb. of soap, $\frac{1}{2}$ lb. soda, 1 oz. nitric acid, and 1 gal. water. First melt the soap and soda in an oven; then mix all well in the water. With a clean scrubbing brush wash the carpet well from seam to seam with this mixture, and rinse it off quickly with clean soft water, using a flannel cloth or sponge. Do only a small piece of the carpet at a time, and rub that dry before doing more.

Process No. 4.—Another process for a very dirty carpet is to take 2 gallons of boiling water, 1 oz. of soap, and 1 drachm of soda. Apply with a clean flannel, rub well, and then rinse well with clean hot water. After becoming thoroughly dry the colors are greatly improved by rubbing it over with a flannel dipped in a strong solution of ox-gall.

A new and excellent process for cleaning carpets, without taking them up, is the following: To 1 quart of warm water add 5 oz. of castile soap cut fine; let it boil, then add 2 oz. pulverized borax. When cold, add 2 oz. aqua ammonia, $\frac{1}{2}$ oz. sulphuric ether, $\frac{1}{2}$ oz. glycerine, $\frac{1}{2}$ oz. spirits of wine. Take 2 tablespoons of the mixture and put it in 1 quart of warm water (or use in this proportion) and with a cloth or sponge rub the carpet briskly. It is not necessary to use the liquid very freely, but a large amount of foam or suds is developed, and rubbing this briskly over the carpet seems to be the most effective agency in cleaning it. After a few square feet of the surface have been thoroughly rubbed with the foam, dry with a flannel cloth or sponge, rinsing it frequently in clean water. Do not use the liquid too freely, or get the carpet too wet. This application does not injure the most delicate colors but, on the contrary, revives them, removes grease spots and smears of almost every kind, and restores the dirtiest carpet to almost its original beauty. Besides which it is easily applied. The process is excellent, and has been kept as a secret.

In cities where bituminous coal is used a carpet may be scrubbed with good effect as regularly as a floor. Sweep the carpet first, and then go over it with a very clean mop or flannel cloth and clean water, with 4 tablespoons of ammonia to the bucketful. Change the water frequently. By leaving the windows open it will soon dry.

Removing Grease From Carpets.—(1) Common wheat flour (or buckwheat if it is in the house) is one of the best domestic applications for removing kerosene, or any oil or grease, from a carpet. Sprinkle it on at once and freely; leave 2 or 3 days; sweep it into a dustpan, and apply more, repeating until all trace is gone. It can be removed in this way. (2) Old grease spots may be cut by applying spirits of turpentine and leaving it on several hours; then rub between the hands and it will come away, and the colors will be uninjured. (3) Lay damp fuller's earth on a grease spot, let it stay several hours, and then rub gently into the carpet; then wash off with a little ammonia carbonate and the colors will be restored. (4) Make a paste by pouring boiling water on equal parts of fuller's earth and magnesia. Place this while hot on the grease spot; when thoroughly dry, brush off. The grease will be gone. (5) Make a thick paste of fuller's earth with cold rain-water and spread thinly over the greased part of the carpet; let it dry thoroughly, and then brush off with a stiff brush; all traces of the oil will have disappeared. This may be applied to the most delicate fabric. If the first application is not sufficient, apply again. It will do the work. (6) If the stain is recent, wash with warm soapsuds and borax—using $\frac{1}{2}$ oz. borax to 1 gallon of water; then rinse with warm water and wipe dry.

If soot is spilled on a carpet, cover it at once with a plentiful layer of salt, and sweep all up together; hardly a trace of the soot will be left. Any trace remaining can be removed by washing the spot with soap and ammonia.

Ink Stains on Carpets.—When ink is spilled on a carpet immediately take up all that is possible with blotting paper, and then wash out what you can with milk, either sweet or sour; then sprinkle white cornmeal on plentifully and leave

over night; in the morning sweep it up, and not a particle of the stain should remain, and the colors will be bright. For *dry* ink stains proceed the same way, but let the milk soak in for a while, and repeat many times. Or prepare a solution of 8 parts soft water to 1 part, by measure, of powdered oxalic acid, and rub it on; then wash it out thoroughly or the acid will destroy the cloth. If the colors are affected at all, dry with flannel and at once apply ammonia to neutralize the acid; then wipe dry, and apply chloroform which will bring out the colors.

Spots from sugar or sweets can be taken out with water and a damp cloth, as water will dissolve sugar.

Varnish stains on carpets should be cut with turpentine or benzine, and then washed carefully with clean soapsuds.

Gum or wax on a carpet can be cut by applying benzine or alcohol, and so removed.

For Whitewash, Acid or Discolored Spots on Carpets.—A few drops of carbonate of ammonia, and a small quantity of warm rain-water, will prove a safe and easy antacid, etc., and will, if carefully applied, remove discolored spots upon carpets, and indeed, all spots, whether produced by acids or alkalies. If injured by whitewash this will immediately restore a carpet.

Either paint or oil may be removed from a carpet by patient rubbing with chloroform. Be careful not to inhale the fumes. (See also the article on "Removing Spots and Stains," elsewhere.)

If the colors of a carpet are injured, see what we say about injured colors in the article elsewhere on "Removing Spots and Stains."

To Lay Carpets.—In laying a carpet work it the lengthway of the material. Nail one end clear across, but do not nail the sides until you are sure it is fully stretched. A carpet stretcher is a great help. A new carpet should be stretched rather tightly, or after being walked over a few days it will rub up in folds and wrinkles. If the puckers in the seams are unusually obstinate and do not disappear after the carpet has been down a few days wet them with clean cold water; when it dries the carpet will be smooth. If before laying the carpet the floor is washed with water containing borax or alum, and if pepper, salt, camphor or alum are sprinkled under, and especially around the edges of the carpet, it will help to keep out insects. Lay down the carpet, turn back the edge, sprinkle on whatever you use; then turn back the carpet and tack it down. Have the floor perfectly dry before the carpet is laid. Carpets of whatever kind wear better if the floor boards are perfectly even; also if laid down over carpet lining, paper or coarse canvas. Good carpet lining is a protection against insects. Get the moth proof lining; newspapers are the next best thing, as the printer's ink repels moths; use several thicknesses of it. If newspapers are laid under carpet lining, that will wear longer. Carpets prepared with loops on the side, and nails in grooves on the floor, on which they hook, are easily taken up, and the plan seems a good one. Carpets which are not tacked down may, if they turn up, be thoroughly wetted on the back; when dry they will lie flat for sometime, but the process may have to be repeated.

Stair carpets should always have a pad put under them at or over the edge of every stair. Use cotton, paper, or pieces of old carpet, which answer very well. Have the pad a little narrower than the carpet itself. Good pads will make the carpet look richer, feel softer to the feet, and wear twice as long. If the carpet is a little longer than the stairs, and is moved up or down a little each time it is taken up, thus bringing the wear in a new place, it will last much longer.

When putting down a new carpet it will be a good idea to save the ravelings; they may be very useful later on in mending the carpet. In buying a carpet, small patterns as a rule are best.

When painting the baseboard, if 2 or 3 inches of the floor are painted at the same time and the same color, if the carpet does not perfectly cover the floor, the gap will not be noticeable.

Insects.—These usually make their appearance where the carpet is folded under, or under heavy furniture and in places where the feet do not tread. With ingrain and Brussels carpets, on their first appearance lay on a wet cloth and apply a very hot flat-iron; the steam generated kills all insects. When a carpet is not taken up at housecleaning time it is well to thus steam it, as that kills all eggs as well as insects. Wilton or Axminster carpets are better sent to a steam

cleaner's. If the wet cloth and hot iron are applied to these it should be on the wrong side, as the thick pile on the right side prevents the penetration of the heat. Either benzine or alum water will eradicate insects, and neither will injure the colors. Pulverized alum, sprinkled under the edges and in troublesome corners, is an admirable preventive. (For further information about insects see the article on "Insect Pests.")

Hearth Rugs.—Do not clean these on the floor, but put them on a large scouring board. Clean only a small part at a time, and as soon as finished, dry them quickly, which is especially important when the pile is thick. They may be cleaned by either of the processes given for cleaning carpets.

To Clean Sheepskin Rugs or Mats.—(1) Take out dirt and grease spots with strong soap liquor, or if necessary use fuller's earth. For a thorough cleaning, after taking out spots in this way, dissolve 1 bar of soap in 2 gallons of boiling water; put 2 quarts of this in a tub or pan containing about 2 gal. of warm water. Put the rug or mat into this pan, and thoroughly wash and punch it. Throw away this first liquor, and mix another lot in the same way, and again wash the rug; continue this until it is perfectly clean. Then rinse well in cold water to take out all the soap. For white skins only, rinse again in cold water in which a little blue has been dissolved. Then wring out, shake and hang to dry with the skin side toward the sun, but not when the heat is scorching, or the skin will become hard and brittle. It should, while drying, be shaken frequently, and hung up first by one side and then by the other. (2) Rub oil or tallow into the skin side, and heat to assist its drying; then with soap and water wash the skin in the usual way; dry it well, and wash with benzine. Thus treated, the skin remains soft.

White Goatskin Rugs.—These may be cleaned with naphtha. Wet a small place, and then rub with a soft cloth until clean; then clean another small place, and so on until all is gone over. Afterwards hang up in an airy place until the odor is gone. Be very careful not to allow a light in the room when using naphtha, as it is very inflammable.

Oilcloths.—Oilcloth is made from canvas covered with layers of oil-paint. It should be kept for some time to harden the paint, as otherwise it chips and soon wears out. In buying, get that which is as old as possible—if several years old, so much the better. That made recently is hardly worth buying. The heaviest oilcloth is usually the best.

On buying a new oilcloth its durability may be increased by first putting on 1 or 2 coats of linseed oil, and, when thoroughly dry, adding 1 or 2 coats of varnish, which should also dry well before the oilcloth is used.

Care of Oilcloth.—Oilcloth should never be scrubbed with a brush, nor should hot water ever be used on it. Soap, soda, ammonia, washing powders and stiff brushes all start the paint and spoil the cloth, and too frequent washing is not advisable. To clean it, use cold water, or that which is not more than lukewarm, and apply it with a large, soft cloth. Dry it well, and then sponge it over with milk; then wipe it with a soft dry cloth and it will look fresh and bright. If used sparingly, warm linseed oil gives it a glossy look, but applied plentifully it makes it sticky, so that the dust adheres to it. The most common mistake is using too much oil. Use but little and polish it well afterwards, thus imparting a handsome gloss. Few housekeepers realize the difference between dusty and dirty oilcloth. Ordinarily, after sweeping, if it looks dull and dusty, go over it with a dry mop-cloth, a little at a time, and it will look as bright as though washed, and will wear a great deal longer thus treated. Whenever water is applied to oilcloth it should be wiped perfectly dry, or the dampness will soon rot it.

It is a good plan to apply linseed oil 3 or 4 times a year; apply but little, rub it in slightly, and polish well with an old silk or flannel cloth. About once a year apply a coat of good coach varnish. Do not step on it till fully dry. Thus treated oilcloth will wear 3 times as long as otherwise.

Whenever oilcloth is laid where it will be much exposed to the sun it should have paper laid under it, as otherwise it may stick fast to the floor.

Oilcloth may be improved by applying now and then a mixture of $\frac{1}{2}$ oz. of beeswax in a saucerful of turpentine; or use linseed oil, turpentine and beeswax mixed. Be sure and rub it in well, and polish it off thoroughly with a dry cloth.

Removing White Spots.—If oilcloth is turned white by setting anything hot upon it, put on a little spirits of camphor, and rub it well with a dry cloth.

OILCLOTH MADE FROM CARPET.—Take an old Brussels carpet and nail it loosely to the floor, wrong side up, in a large unused room. Paint it with a thick coat of linseed oil and burnt umber; let it dry thoroughly, and apply a coat of good varnish; let that dry for a week or two and it will be ready for use. An ornamental border of scarlet, green or blue lines, may be added if desired. Nail it down closely for it will wear four times as long as an ordinary oilcloth, and need not be taken up for years. Renew the paint and varnish as they wear off. It can be washed with milk and water like any oilcloth.

A CHEAP CARPET somewhat resembling oilcloth, may be made by first covering the floor with cheap cotton cloth tacked down all around the edges. Then select paper with an appropriate figure, and paste it on as you would wall-paper. When dry, varnish it 2 or 3 times, and let it dry thoroughly. It should last 2 or 3 years. If canvas is used instead of the cotton cloth, then a layer of brown paper pasted on it, then paste on the wall-paper as above, then apply a thin size of glue, and varnish it with India rubber varnish (2 or 3 coats), a much better and more durable article will be made.

Linoleum.—Soda rapidly destroys linoleum, but soap and grease do not. When dirty, wash it with soap and water; then apply equal parts of linseed oil and vinegar mixed. This is the best thing, and much better than milk, which is commonly used. Linseed oil and turpentine, mixed in equal quantities, if rubbed on occasionally, makes it bright as new and improves its wear, but polish it off well after applying it.

LINOLEUM is a preparation of linseed oil, hardened or oxydized, mixed with ground cork, and pressed on rollers. Many prefer it to oilcloth, because it is not so cold; it is noiseless, and it is impervious to damp.

Matting.—*Straw and India matting may be cleaned:* (1) By using warm water and salt; use a soft cloth, dip it in the solution, wring it out, and wipe the matting, wetting it only sufficiently to remove dust and stains. (2) Prepare good bran-water by boiling bran contained in a bag in water and squeezing the bag to extract the virtue of the bran. When moderately hot wash about a square yard at a time, with a flannel cloth dipped in this bran-water, and dry at once with a linen cloth. (3) For stains, mix lemon juice and salt; apply it to the stain, let it stand several hours, and then wash it off.

Straw Matting.—This should be fastened in position, as it will crack and become wrinkled if laid so that it can be taken up like cocoanut matting. It should be dusted regularly, and washed occasionally—perhaps twice during a season where not much used, and oftener where much exposed.

A thin coat of varnish applied to straw matting will make it more durable and improve its appearance.

Cocoanut Matting.—This when very dirty may be scrubbed while on the floor with hot water and soap, then taken up, loosely folded, rinsed in cold water, and hung on a line till dry. As all dirt sifts through a cocoanut matting it should be taken up once a week, shaken, and the floor washed and dried thoroughly before putting it down again. This is usually about all the treatment it needs.

India matting is made of grass fiber, and if it gets too dry it quickly splits. In hot weather it should be washed over with water once or twice a week, and left wet, and the fiber will absorb moisture enough to keep it fairly tough. If of good quality it wears a long time if properly cared for.

For grease spots on matting apply a paste of fuller's earth or pipe clay.

For ink spots use oxalic acid as advised for wood floors.

Tiled Floors.—Wash ordinarily 2 or 3 times a week with soft water, soft soap, and flannel cloths. If stained, wash with a solution of $\frac{1}{2}$ pail of soft water to 1 pint of hydrochloric acid; then wash thoroughly with fresh water and a little soft soap.

FURNITURE.

Hints About Buying.—In buying furniture it is by no means necessary to buy in "sets," nor need there be any desire to have all the furniture in a room "match." The best taste does not require it, and it often makes a room look stiff and formal. Let each room have an individuality of its own. Do not overcrowd a room either. In buying furniture select it more for comfort than for show. You are fitting up a home to live in, and it should be made the most comfortable and attractive place on earth for its various members. Also when you buy, get

well made furniture which will wear—it will be the cheapest in the end. Do not be afraid of second-hand furniture if you find what you want. Most young housekeepers regard it with too much contempt, while many old ones especially bargain hunters, set too much store by it. The following hints about buying furniture will be of value to young housekeepers: (1) Do not buy what you do not need. (2) When you buy get the best, or the best you can afford. (3) Pay cash, or wait till you can. (4) Buy single pieces, or a few pieces at a time, as you have the means. (5) Do not be ashamed to wait for bargains, and pick them up when they come in your way. (6) Do not buy anything because some one else has, unless you really need it yourself.

Care of Furniture.—Rub varnished furniture every day when it is dusted with a soft silk cloth or chamois skin. Constant rubbing is better than the frequent use of furniture polish, which is apt to make the furniture smeary. It must, however, be kept clean. To do this it is well to wash it occasionally, say twice a year, at the spring and fall housecleaning, with a flannel wrung out of cold tea, or with vinegar and water. Then polish with a dry chamois, and use one of the furniture polishes given further on. After applying *any* furniture polish rub until the furniture is *thoroughly dry* and shiny. Many people apply too much polish, and they do not rub it enough afterwards, so that a thin film is left which collects dust; this should never be.

Painted furniture is cleaned principally by dusting; if washed it should be done quickly, with a little warm water, and dried at once with a soft cloth; or use a damp cloth dipped in whiting, instead of soap.

Oak, polished or unpolished (not varnished), may be cleaned with cold tea, and then polished with a preparation of beeswax and turpentine. After applying it, rub well with flannel.

The best brush for the woodwork of chairs, etc., has bristles at the end.

To Restore Dull and Scratched Furniture.—(1) One of the best things to use, because it gives a good gloss, restores the color of the wood, and covers scratches as well as anything except a thorough scraping and refinishing, is a mixture of 1 part turpentine and 3 parts linseed oil, rubbed on with a flannel cloth. (2) Old furniture which has a dull greasy look should be rubbed with turpentine and then polished with some good furniture polish. (3) To clean varnished furniture a good plan is to take a woolen rag and moisten it with spirits of turpentine; it will clear the dust and cloud from carvings and panels. Then rub the surface thoroughly with a piece of flannel dipped in linseed oil. (4) Old-fashioned housekeepers think that for French polished furniture there is nothing better than beeswax and turpentine, rubbed in thoroughly until it shines like glass.

Cane Chair Seats.—These may be washed with hot water, in which a little lemon has been squeezed, until the cane is well soaked; leave it in the open air to dry. Or, beat out the dust, and then turn the chair bottom upwards and wash the cane, using a sponge and hot water; if it is very dirty use soap also. Wash thoroughly and see that it is well soaked; then let it dry in the open air. This method will make the canes clean, tight and elastic.

Leather chair seats may be revived by rubbing them with "glaire." (See Leather.)

Chintz on furniture can be cleaned by brushing it lightly, then wiping with clean flannel, and then rubbing it with dry bread; it will look nearly equal to new.

Hair Cloth on Furniture.—This may be cleaned by wiping it well with a clean wet cloth.

Upholstered furniture should be beaten with small pliable switches to clear out the dust, and then brushed with a good brush. Always clean carefully around all buttons and tufts on the furniture.

If moths appear in upholstered furniture, saturate it with benzine or gasoline. This will not injure any fabric, and it is death to all vermin. It will soon evaporate so that no odor will be left.

Dust silk, satin or leather upholstery with a soft cloth; anything harsh will scratch it.

White spots on any varnished furniture may be removed: (1) By rubbing with a rag wet with spirits of camphor, or with essence of peppermint, and then with furniture polish or oil. (2) Wet a flannel in turpentine and then rub the

spot hard; several applications may be needed and some patience. (3) Hold a warming-pan, hot stove lid, or shovel of coals over the spot; then rub, while it is warm, with soft flannel. A good way. (4) Rub with pulverized pumice stone mixed with a little linseed oil; then take a cotton cloth and brush the spot over with shellac varnish, thinned with turpentine.

Spots caused by alcohol or anything hot may be removed by hard rubbing with turpentine and sweet oil mixed; after the spots are removed, wash with lukewarm soapsuds, dry quickly, and polish by briskly rubbing with chamois skin.

Finger marks on varnished furniture may be removed by rubbing the spot with sweet oil; on oiled furniture rub them with kerosene.

Dark Stains on Furniture.—These may often be removed with a little oxalic acid and water, rubbed on hard and diligently with a cork; wash the place afterwards with clear water, dry, and polish in the ordinary way. Kerosene will remove many stains from varnished furniture.

Ebonized furniture or wood may be polished and restored by rubbing all spots the way of the grain of the wood with finely pulverized pumice stone and oil; then polish with a soft dry cloth.

Oiled Walnut.—This when it begins to look dingy, can be made to look as fresh as new by re-oiling it. Either linseed or good kerosene may be used. Apply it with a soft woolen rag, and rub it in well; then polish it with clean, dry flannel. Or, put 2 tablespoons of boiled linseed oil in 1 pint of strong coffee; apply warm with flannel; rub with dry flannel to finish.

Willow Furniture.—This should be cleaned with salt and water. Scrub it well with a small brush and dry it thoroughly. Take out *grease spots* with fuller's earth, and *ink stains* with oxalic acid, as described for wood floors or wood.

To Bleach Willow Ware.—Soak it for 15 minutes in commercial peroxide of hydrogen (it can be obtained at any drug store and is often called "oxygenated water"); then take it out and expose it to the sun. This will bleach it snow white. Willow baskets, etc., can be thus bleached.

To Repolish and Finish Old Mahogany.—First remove the old varnish with sandpaper, or if it is French polish remove it with alcohol. Produce a fine finish with the finest sandpaper, then rub with vinegar, and then apply boiled linseed oil; let it soak a few days and then rub it with flannel cloths. Oil each evening, let soak over night, and rub during the day, and the more you rub the finer the finish. A little alkanet root and rose pink added to the oil will hasten the process.

Stains on Mahogany.—(1) An excellent preparation for taking stains from mahogany, as well as ink, if not of too long standing, is the following: To $\frac{1}{2}$ pint of soft water, put 1 oz. oxalic acid, and $\frac{1}{2}$ oz. butter (terchloride) of antimony; shake well. When dissolved, it is ready for use. Rinse afterwards with clear water. (2) Another preparation for removing stains from mahogany is to mix 6 oz. of spirit of salt and $\frac{1}{2}$ oz. of powdered salts of lemon. Drop a little of this mixture on the stains, and rub well with a cork until they disappear; then wash off with cold water.

White spots on mahogany tables caused by hot dishes may be removed by pouring a little kerosene oil on the spot and rubbing it with a flannel cloth; add more kerosene occasionally, rub hard, and persevere until the stain disappears. Always rub the way of the grain. (2) Rub on oil, then pour on a little alcohol and rub it dry with a soft cloth.

Ink Stains on Mahogany, Black Walnut, or Rosewood Furniture.—These may be removed as follows: Take a teaspoon of water and add 6 or 8 drops of nitric acid; touch the spot with a feather dipped in the mixture; as soon as the ink disappears rub it *at once* with a rag wet with cold water, or there will be a white spot not easily effaced. If the first application does not remove it, strengthen the mixture and repeat as before. Or, apply muriatic acid with a rag until the spot is gone, and then wash with water as directed above. Or, use diluted oil of vitriol the same way. Use all acids with care.

A mahogany top of bath may be restored by washing it thoroughly with warm water and soap, and when dry apply the following polish with a flannel, and afterwards rub well with a soft dry cloth: Mix $\frac{1}{2}$ pint brown vinegar, $\frac{1}{4}$ pint linseed oil, 1 wineglass alcohol. Shake the mixture well. If very shabby, it will require several applications.

Rosewood Furniture.—This should be wiped daily with a dry soft cloth; it will not require rubbing, and no oil should be used on it.

To Remove Ink Stains from Highly Polished Furniture.—Put 6 drops of spirits of nitre in 1 tablespoon of water; dip a camel's hair brush in this, and touch the stain gently; rub the place immediately with a sponge wet in cold water, or the nitre will make a spot.

To remove ink stains from any unpainted wood, as tables, benches, etc., rub the spots with lemon juice; then wash off with warm water. Strong vinegar may be used instead of the lemon juice. Either citric, tartaric or oxalic acid will remove the stains. Wash off afterwards with some alkali, like soda and water.

For scratches on furniture rub them with a woolen rag dipped in boiled linseed oil; the article must then be varnished with shellac dissolved in alcohol. Or, camphorated oil rubbed briskly on scratched articles restores the color and polish and leaves them smooth and glossy. It should be rubbed on lightly and quickly with a piece of flannel.

Scratches in varnish will entirely disappear, it is said, if a coarse cloth that has been well saturated with linseed oil is laid over them; this simple remedy will be invaluable to those who have charge of carriages, highly polished furniture, etc.

To Take Bruises out of Furniture.—If they are small keep the place wet with warm water, and hold a red hot iron near it; the wood will soon swell and the dent will be gone. If larger, first wet the spot with warm water, and then lay on brown paper, which has been soaked in warm water and folded into 5 or 6 thicknesses; lay a warm, but not hot, flat-iron on this till the moisture evaporates. Repeat if necessary; 2 or 3 repetitions will bring the dent or bruise to a level.

Drawers which draw out hard can be made to move more easily if the spot where they press is rubbed over with a little hard soap.

Chips broken off of any of the furniture in the house should be saved, and fastened on again with a little glue; liquid glue can be used.

Worm-eaten Furniture.—This may be varnished with copal or white carriage varnish; go all over the wood with it; apply two coats so that the interstices are well filled with it.

A furniture filling may be made as follows:—Take $\frac{1}{2}$ pint of flour, 1 gallon plaster of paris, $\frac{1}{2}$ oz. prepared chalk, $\frac{1}{2}$ oz. pulverized pumice stone; mix all together; add $\frac{1}{2}$ gill Japan dryer and 1 quart boiled oil.

Any insects attacking furniture may be killed by saturating it with benzine.

Baths should be cleaned about once a fortnight. If neglected, they are apt to become dark colored. Rub them with wet flannel dipped in salt, which will keep them in good condition. Keep the brass faucets brightly polished.

Pianos.—With these, moths and moisture are the two great enemies which must be guarded against. If moths are found, saturate the infected parts at once with benzine. As a preventive, use some strongly odoriferous preparation like oil of cedar. (See our article on "Insect Pests.") To guard against dampness do not stand a piano on a stone floor nor against an outside wall if it can be avoided. If wires accumulate rust, as frequently happens, the dampness comes either from the general atmosphere of the room, or from the floor. The latter can be prevented by covering the floor beneath the piano with waterproof paper, or use ordinary brown paper coated on both sides with linseed oil or varnish, laying it under the carpet. To remove rust from the wires, rub them lengthwise with a piece of chamois leather with emery flour spread on it; afterwards remove every particle of the powder with a clean leather.

Dust a piano regularly, carefully and thoroughly. Use a pair of bellows to blow out the dust under the wires. Dust off the polished surface lightly with an old soft, silk handkerchief, or canton flannel.

Expose the ivory keys to the direct rays of the sun as often as possible, as that bleaches them and prevents their turning yellow. Keep the instrument closed in damp weather and at night.

To remove finger marks, breathe on them and wipe them off lightly and quickly with chamois skin.

Be cautious about using piano polishes. When applied, use but little, and rub it off well with soft woolen cloth. Ordinarily, clean, when the piano needs it, with a little lukewarm water, and rub dry with an oiled chamois skin, doing but little at a time. Rub bruises with a little pumice stone.

For the care of the ivory piano keys, see "Ivory."

Furniture Polishes.—There are a great many recipes for these; we give a few of the best of them. (1) Take $1\frac{1}{2}$ oz. of alcohol; $1\frac{1}{2}$ oz. of terchloride of antimony; $\frac{1}{2}$ oz. hydrochloric acid; 8 oz. linseed oil; 1 cup vinegar. Mix thoroughly, and apply a thin even coat. (This has been repeatedly sold for \$5.) (2) Take equal parts of linseed oil, turpentine, and either vinegar or alcohol; mix. Rub in well, and polish with a piece of chamois leather. This is cheap, useful, and excellent for dingy furniture. (3) Take equal parts of linseed oil, spirits of wine and shellac varnish; mix. This is excellent. (4) Boiled linseed oil rubbed well into the wood with a cloth is a very good substitute for furniture polish. (5) Kerosene oil applied to ordinary furniture and then rubbed well with soft flannel or chamois skin freshens it nicely. (6) *A French Polish.*—Take $\frac{1}{2}$ oz. shellac, $\frac{1}{2}$ oz. gum lac, $\frac{1}{4}$ oz. gum sandarac, 1 pint spirits of wine: put all together in a stone bottle; shake frequently until the gums are all dissolved, and it is ready for use.

Piano Polish.—Take an 8 oz. bottle and fill it a little over $\frac{1}{2}$ full of turpentine; add 1 tablespoon of alcohol and $\frac{1}{2}$ teaspoon of rotten stone; then fill up the bottle with sweet oil. Shake well before using. Apply with a cheesecloth; then rub well with a clean cloth; lastly with a cloth with barely a trace (no more) of alcohol on it; too much alcohol will make the surface streaked. Rub lightly at first, then harder, and the longer you rub the finer the finish. (Used by the best piano dealers.)

French Polish Reviver.—Mix $\frac{1}{2}$ gill vinegar; 1 gill spirits of wine; 1 drachm linseed oil.

Violins.—To clean: (1) Use soap and water, but don't let it run through the "S" holes. Clean the interior with dry rice. Do not use spirits. (2) Use ordinary paraffine oil; slightly saturate a rag of soft silk, and wash the violin with it. The effect is almost magical; the paraffine dissolves the crust of dirt and resin, and cleans the varnish without injury. When clean, rub with linseed oil. Spirits of wine removes the old resin, but often takes the varnish with it. For the inside, steep a handful of rice in a solution of water and sugar for 5 minutes; strain off, and nearly dry the rice—or till it is barely sticky; put it in at the sound holes, and shake. It will pick up all dirt; then turn it out.

Violin Bows.—Wipe carefully with a flannel moistened in a solution of borax and water. Or use the best yellow soap, then wipe with clear water on flannel, and dry with a linen cloth.

Hints About Wood.—For an oak stain for new wood mix burnt umber and raw sienna in a saucer; have some boiled linseed oil in another dish, and dip a flannel rag in the oil, then in the first mixture, and rub on the wood; the next day rub it over with clean oil.

A red stain for chairs, bedsteads, etc., is obtained by using archil, cold. To improve it, add a second coat, and, when nearly dry, brush it over with a hot solution of pearlsh in water.

Genuine oak may be darkened by applying strong liquid ammonia with a rag or brush. The color deepens at once and does not fade. It gives the appearance of age. The shade may be varied by applying one or more coats. Considerable difference is made by applying oil on any of these stained woods, as it helps to bring out the color and beauty of the grain. In Germany cabinet makers use strong coffee to darken oak.

For an oak stain take 2 oz. of pearlsh, 2 oz. American potash, and 1 quart of water; bottle, and it is always ready for use. If the color is too deep add more water.

For a rosewood stain take 1 pint of water and dissolve in it about 5 cents worth of logwood; add pulverized alum, a little at a time, till the solution is dark brown. Apply this to the article to be stained, and when dry apply a coat of oil or varnish as preferred.

For a Walnut Stain.—(1) Dissolve in 5 quarts of hot water, 3 oz. of manganate of potash and 3 oz. of sulphate of manganese. Apply to the wood with a brush, and repeat several times. Or, (2) take $\frac{1}{4}$ oz. bichromate of potash, $1\frac{1}{2}$ oz. washing soda, $2\frac{1}{2}$ oz. Vandyke brown, 1 quart water, boil 10 minutes. Apply either hot or cold with a brush.

For a mahogany stain boil $\frac{1}{2}$ lb. madder and 2 oz. logwood chips in 1 gallon of water, and brush well over while hot. When dry, go over with pearlsh solu-

tion, 2 drachms to the quart. By using it strong or weak the color can be varied at pleasure. Or, to a pint of nitric acid, dissolve alum the size of an egg; to this add a solution of extract of logwood till the desired shade is obtained.

For an ebony stain infuse gall nuts in vinegar in which rusty nails have been soaked; rub the wood with the infusion; dry, polish, and burnish. Or stain first with a hot saturated solution of logwood, containing a little alum; when dry, brush over with common writing ink.

To Ebonize Wood.—Take 1 lb. logwood chips and 3 pints water; boil to 1 pint; apply hot to any close grained wood; let dry and give another coat; let it dry slowly and then sandpaper; mix 1 gill of vinegar with 3 tablespoons of iron or steel filings; let stand 5 or 10 hours and brush on the wood; let it dry and give another coat of the first; this sends the vinegar deeper, and makes a denser black. Then sandpaper smooth, and polish.

To Fill Cracks, Nail Holes, Etc.—(1) Take some sawdust of the same kind of wood you wish to patch, and soak it 7 or 8 days in water; then if boiled for a while it will become pulpy, when it should be put in a cloth and the water squeezed out. Mix some of this in thin glue, and press it into the cracks or holes. If neatly done, it will hardly show when dry and finished off. (2) A cement made by melting beeswax, resin, and shellac together is often used for this purpose. (3) Powdered whiting mixed with painter's drying oil is an excellent filler for pores, but first color it to match the wood it is to be used on.

To Harden Wood.—Boil it in olive oil 8 or 10 minutes.

French Method of Polishing.—First polish the wood with a piece of fine pumice stone and water, rubbing the way of the grain; finish with boiled linseed oil and fine tripoli on flannel. The polish produced is superior, but a good deal of patience is required.

To Render Wood Fireproof.—(1) Soak it 4 or 5 days (covering every part) in a strong solution of alum and sulphate of copper. (2) Whitewashing it 2 or 3 times renders it partially fireproof.

To Polish Varnish.—Wrap 3 or 4 thicknesses of flannel over a cork, dip it in a paste of fine tripoli and water, and polish it on the varnish. Rub only long enough to make a smooth surface, without over-doing it. Wipe off a spot with a sponge to see if it is sufficiently polished; when satisfactory, finish it with nut-ton suet, fine flour, and the bare fingers; a beautiful polish results.

Nails and Screws.—These may be easily forced into hard wood if they are first soaped; or cover them with grease or oil.

To fill holes of nails, screws, etc., make a thick paste of glue and fine sawdust; pound this into the hole and let dry; it will be as good as new. Or, for a ready filling, use putty.

Nails and screws which are rusted into wood so that it seems impossible to start them should have a little kerosene poured over them; after soaking a short time the rust will frequently give way. Nuts and bolts very badly rusted may often be started the same way. A red hot poker or iron pressed on the head of a rusty screw for 3 or 4 minutes will often start it so that it will come out easily.

Screws for machinery, if they are dipped in a paste of graphite and oil before screwing them in, will not rust in, and can be easily removed even after the lapse of years.

To Deaden Sound or Noise.—A simple device to deaden the sound of hammering or pounding would often be a great relief. There are several ways. (1) Put rubber cushions under the legs of the work bench; pounding on it will then be hardly heard in the room below. (2) Take kegs, put in a few inches of sand or sawdust, then put in a board or block on which rest each leg of the bench, and then fill the kegs around the legs with sand or sawdust. This will prevent both noise and vibration, so that an anvil can be pounded on in an ordinary dwelling house, and hardly disturb the inhabitants.

IVORY, STONE, RUBBER, ETC.

Amber.—To mend amber smear the broken part with linseed oil, heat the fracture carefully over a gas or alcohol flame protecting the other parts from the heat, and when sufficiently soft and adhesive press the edges together. To polish

use whiting and water first, and finish with olive oil on a flannel cloth. Polish it a little at a time at intervals, or it will be apt to fly to pieces with the electricity generated. *Amber may be improved by boiling it in rape oil for 24 hours.*

Bone and Ivory.—*To clean these* rub them with a paste made of whiting and spirits of turpentine. Or to remove stains rub them with powdered pumice stone and soap; then polish with dry whiting. Soap or bicarbonate of soda (baking soda) and tepid water may be used to clean ivory, but dry it well afterwards; if the water gives the article a yellowish look dry it in a warm place.

To Whiten Ivory.—(1) To bleach out yellowed ivory handled knives and forks cover them with a coating of whiting moistened with lemon juice; leave it on 8 or 10 hours, then rinse in cold water and polish, first with lemon juice and then with a soft cloth. It will bleach them. (2) When ivory ornaments get yellow or dusky looking, wash them well in soap and water, using a small brush to clean the carvings, and place them while wet in bright sunshine; wet them 2 or 3 times a day for several days with soapy water, still keeping them in the sun; then wash them again and they will be beautifully white. (3) Mix a tablespoon of oxalic acid in $\frac{1}{2}$ pint boiling water; then wet the bone or ivory article and then apply the dilute acid with a stiff brush; then rinse well, and dry in a cloth before the fire, but do not hold it too close. (4) Yellowed ivory may be whitened by applying with a stiff brush a solution of 1 oz. nitric acid in 10 oz. soft water; then rinse thoroughly and dry as above.

To Remove Ink Stains from Ivory.—Apply repeatedly a solution of quadrolazate of potassa in water. Get it at a drug store. Or use oxalic acid.

To Bleach Bones.—(1) Soak them for a few days in a solution of 4 parts water to 1 part fresh chloride of lime; then take out, wash, and dry in the open air. (2) Boil them in a mixture of water, unslacked lime and bran, until white and free from fatty substances.

To Polish Bone or Ivory.—(1) Rub them first with fine glass paper, then with a wet linen cloth dipped in powdered pumice stone, and then with a cloth wet in soapsuds and dipped in whiting. (2) Rubbing spotted or yellowed ivory with fine emery paper, and then repolishing with pumice stone and whiting, leaves it white and clean.

To remove the disagreeable odor and fatty emanations of bone and ivory, place them in a glass jar, raised a little above the bottom by resting them on strips of zinc, and cover them with turpentine; expose to the sun and leave in 3 or 4 days, or longer if in the shade. They will be beautifully bleached.

To Stain Ivory.—*For black*, immerse it frequently in common black ink. Or, boil for some time in a strained decoction of logwood; then steep in a solution of red acetate of iron. *For blue*, immerse it in a dilute solution of sulphate of indigo, partly saturated with potash. *For green*, boil it in a solution of verdigris in vinegar until dark enough.

To Silver Ivory. Immerse a small piece in a weak solution of nitrate of silver, and leave it till the solution gives it a deep yellow color; then take out, immerse in a tumbler of clear water, and expose, while in the water, to the rays of the sun; in about 3 hours it changes to a black color, but on being rubbed becomes a brilliant silver.

To Make Ivory Flexible.—Ivory immersed in a solution of pure phosphoric acid, until it partially loses its opacity, and then washed in cold soft water and dried, becomes very flexible; if long exposed to dry air it loses its flexibility, but by immersion in hot water it can be restored.

To Soften Ivory.—Slice $\frac{1}{4}$ lb. of mandrake, and put it into $\frac{1}{2}$ pint of the best vinegar; put the ivory in this and let it stand in a warm place 48 hours; it may then be bent into any shape.

Substitute for Ivory or Horn.—Make a thick paste of starch and a little water, and heat it to 212° to 265° F., when it becomes an elastic, transparent mass, easily dried and worked into any form desired.

Artificial Ivory.—This may be made by mixing isinglass and brandy into a paste, with powdered egg-shell very finely ground; give it any desired color, oil the mold, and pour it in warm; leave the paste in the mold till dry; it will strongly resemble ivory.

Ivory Piano Keys.—These may be cleaned with a damp cloth dipped in whiting; or use spirits of turpentine and whiting mixed; then polish with a dry cloth.

If they turn yellow, leave the lid open and expose them to the sunshine, wetting them with soapy water as we explain for bleaching ivory. They turn yellow less when much exposed to the light and air. Or, whiten them with lemon juice, oxalic or nitric acid in the manner explained for whitening ivory.

Ivoryine.—This can be cleaned as directed for celluloid. Its general care is much like ivory.

Celluloid.—This cracks easily when very cold; when put in hot water it becomes soft and pliable. *To clean it* (1) rub with spirits of turpentine and whiting mixed. (2) Use tripoli or pumice stone on woolen cloths. (3) Use warm water and hand sapolio (common sapolio is too coarse).

Horn.—Polish it with rotten stone and oil; finish it with dry flour on a linen rag.

To Polish a Bullock's Horns.—First scrape them with a glass or steel scraper; then rub them with cloth wet with water and dipped in powdered pumice stone, until a smooth surface is obtained; then polish with rotten stone and linsed oil; finish with dry flour and a clean linen rag. The more they are rubbed with the rotten stone and oil the better the polish.

White horn buttons may be made to imitate *mother of pearl* by being boiled in a saturated solution of sugar of lead, and then laid in very dilute hydrochloric acid.

To Soften Horn.—To 1 lb. of wood ashes add 2 lbs. of quicklime; put them into 1 quart of water; let the whole boil till reduced to $\frac{1}{3}$; then dip in a feather, and if, on drawing it out, the plume should come off, it is boiled enough; if not, boil a little longer. When it is settled, filter it off, and in the liquor thus strained put in shavings of horn. Let them soak for 3 days, and, first well anointing your hands with oil, work the whole into a mass. Horn thus softened can be molded into any desired shape.

To Stain Horn.—For *black*, use nitrate of silver solution, and expose to the sunlight. For *blue*, stain green, and then steep for a short time in a weak solution of sulphate of indigo, containing a little cream of tartar. For *green*, steep in a solution of 2 parts verdigris, and 1 of sal ammoniac. For *red*, soak in very dilute nitric acid for a few minutes, and then apply a strong infusion of cochineal in aqua ammonia. For *yellow*, steep in a solution of lead acetate, and then, after drying, in a solution of bichromate of potash.

Tortoiseshell.—This is best polished with rouge, on a linen rag; finish by polishing with the hand. Tortoiseshell combs should always be rubbed with the hand after they are taken from the hair; they will not then lose their polish. They can be washed with ammonia and water like other combs to clean them.

Marine Shells.—*To polish*, first clean by rubbing with a rag dipped in hydrochloric acid, till the outer skin is removed; then wash in warm water, dry in hot sawdust, and polish with chamois leather. Shells which have no natural polished surface may either be varnished, or rubbed with tripoli powder and turpentine on wash leather; then with fine tripoli alone; then with a little olive oil; bring up the surface lastly with chamois leather as before.

To Fasten Shells on Wood or Pasteboard.—Melt common resin and stir in about twice as much brick dust; use it like sealing wax. Or, use very thick gum water, in which finely-powdered whiting is stirred until it is thick.

Mother of Pearl.—*To polish*, go over it with finely-powdered pumice stone, with which polish it very smooth; then apply putty powder and water with a rubber, which will produce a fine gloss and a good color. *To clean mother-of-pearl* wash it with whiting and water; soap destroys its brilliancy.

Japanned Ware.—Clean it when possible by rubbing with silk or flannel alone, without even water. Never leave any water in a japanned teapot when through with it. If a japanned article gets dirty, rub it with a sponge wet in lukewarm water and soap, but used sparingly. If it looks smeary, dust on some dry flour, and rub it with the hand, a flannel, or a soft leather. If it gets marked, rub it with a woolen cloth and a little sweet oil, or whiting and oil. Do not pour hot water on japanned ware, as it will make it crack and peel off. When scratched (if the scratch is not so deep as to go clear through the varnished surface) apply sweet oil and rub with the hand alone—that is the way the polish is first produced, and will restore it.

Japanning for Old Trays.—First clean the old trays thoroughly with soap

and water and a little rotten stone; then dry them by wiping and exposure to the fire; next mix good copal varnish with bronze powder, and apply with a brush to the denuded parts; then set the trays in an oven at a heat of 212° to 300° , until the varnish is dry. Two coats will make old trays equal to new.

Moorish Trays.—If not very dirty clean them by rubbing a little lemon juice over them. If *very* dirty put into hot water with a little soda and soap, and scrub clean with a soft brush; then lift out and pour on boiling water, and let them soak in this a little while; then dry carefully with a soft cloth, and rub with a very little olive oil.

Plaster Casts.—*To Clean.*—Busts and statuettes may be cleaned by dipping them into a thick liquid starch; or apply a thin solution with a brush covering every part. Let it dry 3 or 4 days and carefully peel off the starch—the dirt will come with it.

Plaster Casts may be Polished: (1) By coating them with white wax, and placing them before the fire until the wax is absorbed; a considerable polish can then be obtained by friction. (2) With a camel's hair pencil lay skimmed milk on the plaster till it will absorb no more. Shake or blow off any that remains on the surface, and lay the figure in a place perfectly free from dust; when dry it will look like polished marble. If the milk is not perfectly skimmed it will not answer the purpose. (3) Prepare a strong solution of alum water, dip in the figures, and they will look very much like *alabaster* when dry. (4) An old ivory tone can be imparted by diluting some orange shellac with a little alcohol, and applying several thin coats with a brush. (5) Plaster casts can be brushed over with graphite (a brilliant black lead) and they will then resemble genuine bronze very closely.

A Varnish for Plaster of Paris Casts.—Take $\frac{1}{2}$ oz. white soap, $\frac{1}{2}$ oz. white wax, and 1 quart water; boil them together for a short time in a clean vessel; apply when cold with a soft brush. It does not sink in and it readily dries. Lightly rubbing afterwards with a soft silk handkerchief improves it.

To Color Plaster Casts of Brackets, etc., Like Oak.—Saturate the cast with oil, and size it twice; then, in a saucer, rub down asphaltum with water till it is liquid, adding a few drops of spirits of wine to soften it, lay this on with a soft brush so as to imitate the graining of oak. When dry, varnish it. After applying 2 coats of good copal varnish it will last for years; and can be cleaned by washing with soap and water.

Plaster of paris mixed with vinegar instead of water will not harden for 20 or 30 minutes, instead of hardening at once as it does when mixed with water; the mass will be like putty, and can be handled and molded easily.

Alabaster.—This may be cleaned with strong soap and water. If too much discolored make a paste of quicklime and water, cover the article with it, and leave it for 1 day; then wash off with soap and water, but apply hard rubbing to all stains. Or, having washed off all dirt and grease, wash with dilute muriatic acid.

Brownstone.—Muriatic acid is used by masons to take out stains, and will remove most of them. Strong soda will often take out most of an oil stain; then rub with sandpaper. The green formation which sometimes troubles house-keepers in the cities can be removed by using a solution of 1 part carbolic acid to 3 parts warm water.

Jasper or Porphyry.—*To clean* it mix up a quantity of the strongest soap-lees with quicklime to the consistency of milk, and lay it on the stone for 24 hours; then wash off and it will appear like new. It may be improved by afterwards rubbing with fine putty powder and olive oil.

Marble.—*To wash marble* use a soft cloth or chamois skin, and warm water; if it is dirty add some ammonia to the water. Do not use soap on marble. Dry at once with soft flannel or chamois skin. *For marble wash-basins, sink-fixtures, etc.,* use salt; it removes incrustations and deposits, and leaves the marble clean. Dust marble with a feather duster.

To Clean Stained Marble.—(1) For light stains lemon juice will often be effectual, or use javelle water; then rinse clean. (2) Take 2 parts of soda, 1 part pumice stone, and 1 part finely powdered chalk; sift these through a fine sieve, and mix them into a paste with water. Rub this well over the marble with flannel, and the stains will be removed; then wash with ammonia and water and

it will leave a beautiful polish. (3) Mix with $\frac{1}{4}$ pint of soap-lees, and $\frac{1}{2}$ gill of turpentine, sufficient pipe clay and bullock's gall to make the whole into a rather thick paste; apply it with a soft brush, and leave it on 1 or 2 days; when quite dry rub it off with a soft rag. If needed, repeat 2 or 3 times or until the marble is quite clean. (4) Mix quicklime and strong soap lye to the consistency of thin cream; apply and leave on 1 day; wash off with soapsuds. (5) Mix 1 part bluing and 2 parts whiting (both powdered) and $\frac{1}{2}$ lb. soft soap; bring to a boil, and while hot apply to the stained marble, using a soft cloth; leave on till dry; then wash off with hot water and soap and a little salts of lemon added; rub dry with flannel, and the marble will look like new.

The above preparations will take off surface stains, but if the stains have gone deeper and formed chemical combinations with the marble it may be necessary to grind it down to a fresh surface and repolish.

For black marble, spirits of turpentine may be used.

If grey marble hearths are disfigured with spots rub them with linseed oil.

Spots from Sulphur and Phosphorous on marble, caused by lucifer matches, can be extracted with carbon bisulphide, which can be bought at any drug store.

Ink Stains or Iron Mould may be removed from marble as follows: (1) Take $\frac{1}{2}$ oz. butter of antimony and 1 oz. oxalic acid; dissolve in 1 pint rain water; add enough flour to bring the mixture to the proper consistency. Lay it evenly on the stained part with a brush; leave a few days, and wash off. Repeat if the stain be not wholly removed. (2) Moisten iron stains with vitrol or oxalic acid; if they do not come out readily leave it on half an hour or so; then wash off thoroughly. (3) Iron rust can often be removed with lemon juice, or lemon juice and vitrol mixed in equal parts.

To Remove Grease Spots from Marble.—(1) Make a paste of powdered pipe clay and fuller's earth; mix with strong soap lye; lay a thick coating on the marble, and pass a moderately hot flat-iron over it lightly until it is dry. Leave a short time, and wash off with clean water. Repeat the process if necessary until all grease is removed. (2) Make a paste of whiting and potash; lay on, leave a day or so, and brush off. (3) Make a paste of lime, pearlash and water; spread it on, leave several hours, and brush off. Repeat several times if necessary. (4) For oil spots apply either common clay or calcined magnesia, saturated with benzine; leave till thoroughly dry, and brush off. (5) Mix caustic soda or potash and quicklime, and apply.

To Clean Smoke from Marble.—(1) Mix chloride of lime and water to a thin paste, and apply it with a brush to the smoky place; leave it one or two moments, and wash off with hot soapsuds. (2) Use the first recipe given for removing grease spots. (3) Rub the smoky place quickly and vigorously with a flannel dipped in strong ammonia; then take hot soapsuds and wash it off. (4) For the smoke stains from bituminous coal or kindling wood, mix whiting and washing soda, and moisten them with barely water enough to make a paste; rub the spots with flannel dipped in this, and then leave it on for several hours; then rub off and repeat if necessary. When the spots are gone wash with clean soapsuds, wipe dry, and polish with a chamois skin or flannel.

Acids on Marble.—Marble being composed of carbonate of lime (and so of an alkaline nature) any strong acid spilled on it will attack it actively, and if the action is not checked at once will roughen the surface. The prompt application of ammonia, soda, or other alkali will neutralize the acid and stop its action, or if these are not at hand apply water freely to dilute the acid. If the surface is roughened, nothing but repolishing will remove it. For the above reason any strong acid should be used very cautiously about marble.

Scratches on marble which make it look disfigured, will usually disappear if they are rubbed hard with wet whiting; then wash and wipe dry.

A sort of *scum* is often noticed in marble wash basins. Rubbing with salt will take it all off readily, and leave the basin clean and bright.

To Polish Marble.—(1) Grind it down with fine sand and water, using a fine sand stone; then wrap a piece of felt around a flat stone or iron, dip it in fine emery powder, and polish out all scratches; finish with putty powder and flannel rags. (2) If in removing stains the polish of marble is deadened, repolish with oxide of tin and water, applied with a cloth; or rub with chalk wet with water to give a gloss.

Marble Statues.—(1) Dust these carefully every day with a feather duster; in summer cover them with gauze. If they become fly-specked, wipe them off with alcohol, but soap and warm water should not be used. Improper washing often yellows fine statues. Do not handle them with the bare hand as the oil in the hand discolours them. If properly cared for they will not need washing more than 2 or 3 times a year; then use pure cold water and a painter's brush. (2) Care must be taken not to scratch polished marble; it can be washed carefully with a brush and warm water and ammonia; then rinse with clear cold water, and wipe dry. Unpolished marble can be carefully washed with "Sapolio."

Marble busts which are soiled should never be washed with soap—that injures them; use instead very weak muriatic acid, in cold water.

To prevent statues, busts, etc., from marring any furniture they rest on, cut a piece of plush, velvet, or silk, the same shape, but a little smaller than the statue or bust, and put that under it. It will prevent scratching but will not show.

Marble Ornaments.—These should never be cleaned with soap and water. A strong solution of borax will often clean them when slightly discolored. If badly stained or discolored they can be restored by using a paste made of 2 parts common washing soda, and 1 part each of powdered chalk and powdered pumice stone.

Artificial Marble.—This is made with plaster of paris, ground glass, and milk, which, when thoroughly dried, can be rubbed smooth with sand paper, and then polished with emery and oil.

Marble may easily be colored beautiful tints. A solution of nitrate of silver gives a deep color. Nitro-muriate of gold gives a beautiful violet purple. A solution of verdigris gives a clear green. Solutions of dragon's blood give a beautiful red. Orpiment dissolved in ammonia gives a yellow. Verdigris, boiled in wax, and applied hot, gives a fine emerald.

Slate.—Some people prefer slate hearths to marble, as they are not soiled so easily and are more readily kept clean. They can be washed clean with warm water and a flannel cloth. They are improved by being oiled thoroughly with linseed oil, as they will not then show grease.

Soapstone or Sandstone. Hearths are often made of these. To clean them first wash with clean water; then take a piece of the stone with a flat face, 3 or 4 inches square, and, having sprinkled on powdered soapstone or marble, scour the hearth till clean.

Stone.—(1) To remove grease from stone steps or passages, pour strong soda and boiling water over the spot, and lay on fuller's earth made into a thin paste with boiling water; leave all night. Repeat the process if any grease remains. (2) Grease may sometimes be taken out by using sand and very hot water, with soap and soda, and rubbing them on with a hard stone. (3) Same as No. 1, given for taking grease from marble.

To Clean Stone Steps, Window-Sills, Etc.—Wet flannel dipped in mason's dust is excellent. Bath-brick is used by many, and is good. An old wash, not so white as the foregoing, but which does not so readily come off, is 1 lb. pipe-maker's clay, 1 quart of water and 1 quart of beer boiled together, and a bit of stone blue added. Wash with this, and when dry rub with a flannel and brush.

Grindstones.—Wet the stone by dropping on water from a pot suspended above it, and stop off the water when not in use. Do not let it stand in water when not in use, as that causes soft spots. Clean off all greasy tools before sharpening them, as the grease or oil destroys the grit.

Tiles.—Wash with clean soft water, soft soap and flannel cloths. Have the latter free from grease. Never use a scrubbing brush. If the tiles get stained apply a little muriatic acid with a clean rag, and then wash thoroughly with clean water. Take off grease with some alkali, like pearlash and water.

Encaustic tiles should be washed once or twice a week with skimmed milk; it is much better than soap for them.

Rubber.—To soften Old Rubber.—When rubber rings, such as are used on fruit jars, become hard and brittle, restore them by soaking in a solution of 2 parts water to 1 part ammonia or soda; soak until their elasticity is restored, which is from 5 to 30 minutes usually. Other old soft rubber articles can be softened the same way.

Wringing-Machine Rollers.—When the rubber rollers of wringing-machines

become sticky or stained by colored clothes, clean them with kerosene, or by running through them a cloth wet with kerosene.

To Prevent India-rubber Articles from Becoming Hard and Cracking.—Prepare melted paraffine at 212° and put in the articles, leaving them from a few seconds to several minutes, according to their size; then take out and dry in a hot room at 212° F.

Rubber hose which has become hard can be softened by dipping it in petroleum; then hang up for 48 hours, letting the oil drip off; repeat 2 or 3 times.

To Preserve the Elasticity of India-rubber.—Wash it about 5 or 6 times a year with slightly alkaline water, like ammonia and water or soda and water.

To Cut Rubber.—Use a wet knife. Dipping the instrument used in soda or potash lye will aid in piercing or cutting rubber corks.

Old hard India-rubber may be softened again by letting the vapor of carbon bisulphide act upon it; remove from the vapor as soon as it becomes soft.

Faded rubber goods can be varnished by diluting black Japan varnish with linseed oil until thin enough for the purpose; or use a thin shellac varnish, colored with lamp black for black goods.

To Mend a Mackintosh.—Get at the store a piece of the same material of which the mackintosh is made, and cut out a suitable patch. Buy or make some India-rubber cement (we give recipe elsewhere) and apply a little on each side of the torn part, and also on the patch; when it begins to feel tacky, bring the edges together, adjust the patch nicely, and lay on a weight to hold it in position. Leave for several days, until quite hard.

Mend rubber overshoes, etc., with the rubber cement given among the "Cements."

Mackintoshes can without detriment be carried about in a roll or strap, but when not in use they should be opened out so that the air can have access to them; if kept rolled up, they will become sticky and unpleasant. When one has been wet, spread it out to dry, but do not put it near the fire. To remove spots of mud from a mackintosh try spirits of wine, though it is not always successful.

Sponges.—To keep sponges in condition always squeeze them dry after use, and never let them stand in soapy water. Clean them as follows: (1) When sponges get greasy let them dry, and then work them with a little turpentine; after a few minutes wash them with a little soap and water and a little soda. This will make them quite clean, with little trouble. (2) Place the sponge in a basin, completely cover it with bran, pour boiling water over it, and cover the basin to prevent the steam from escaping. Let stand till cold, and rinse it thoroughly in cold water; wring out all the water with a towel, dry, and it will be clean. (3) When sour, rub fresh lemon juice into it thoroughly; then rinse it a number of times in tepid water, and it will be sweet and clean. (4) If washed about once a week in tepid water containing borax and ammonia, and then dried in the open air and sunlight, they will keep clean and fresh. (5) Prepare a solution of water and potash permanganate, strengthened to a wine color; soak the sponge in this for some time; take out, squeeze, and next immerse in a solution of 10 parts water to 1 part muriatic acid, and let soak for some time; then squeeze out the acid and wash thoroughly in clean water. Thus treated, even photographic sponges can be perfectly cleaned and their color restored. (6) Either citric acid or sulphuric acid (about 2 tablespoons to a pint of water) will clean sponges nicely. Steep them about 2 hours, and then wash clean. (7) Soak in milk 12 or 15 hours; then rinse thoroughly in cold water, and dry.

New sponges which are hard and gritty may be cleaned and softened for use by first working thoroughly in cold water, then boiling in clean water for $\frac{1}{4}$ hour, then taking out and working in cold water again; and repeat this operation 3 or 4 times, until the grit is gone. Do not boil too long at any time, or the sponge will become tender and rotten.

Whalebones.—By merely soaking them for a few hours in water, and then drying them, bent whalebones can be restored and used again. When putting them in the casings it is an excellent idea to make them flexible and conform to the figure, by soaking them in warm water for a few minutes, which softens them.

Tobacco Pipes.—A simple and effective method of cleaning them is to fit in a thin cork, with a hole cut in the center, and let the water from the faucet run through the pipe till it is cleaned.

Rope.—New rope, if boiled in water 2 or 3 hours, will be cured of its annoying stiffness and made pliable; then hang it up, until fully dry, in a warm room, and keep it from kinking while drying. This will not weaken it at all.

It is always convenient to know how to fasten ropes, and yet few people know how to make the best knots. We give a few. To fasten a rope to a pole, use the "fisherman's bend," used by sailors. To make it, pass the rope twice around the pole or rod; then take a "half hitch" around the long part of the rope, as at 1; then thrust the end under the 2 turns, as at 2, 3, and last loop the end about the long part, as at 4. The turns are clearly shown in Fig. 1. To fasten two ends of rope, use the "sheet bend," so called. To make it, form a "horse-shoe" with one end of the rope, as b. b.; then pass the other rope through the loop, or horse-shoe; then around and behind both parts of the other rope; then back under itself, as at 1; see Fig. 2. Another good knot is known as the "carrick bend." To make it, form one end of a rope into a loop, a. a., technically known as a "bight." Then put the end of the other rope through the "bight" as at 1; around behind the other rope, as at 2; then through in front of the other end as at 3; then back through the "bight" as shown at 4; see Fig 3. It makes a very strong knot.

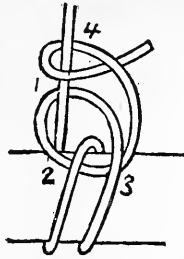


Fig. 1.
Fisherman's Bend.



Fig. 2.
Sheet Bend.



Fig. 3.
Carrick Bend.

GLASS, CHINA, EARTHENWARE, ETC.

Windows.—Wash windows when the sun does not shine on them—in pleasant weather, but during that part of the day when the sun does not strike them is the best time, or choose a cloudy but not rainy day. If the sun shines on them while being washed they dry so rapidly that it is almost impossible to avoid having them streaked, because they dry partially before they can be wiped. Wash the inside first, and then the imperfections can be seen easily from the outside. Use clean rain water, and add enough ammonia to make it feel slippery. Get the dirt out of the corners with a cloth wrapped over a piece of wood, then rinse, and then polish the glass with newspaper, tissue paper or chamois skin; the two last are best. This is the best way, making the glass beautifully clear. Whiting is good to clean windows with; so is alcohol, and so is soda. Benzine, with enough calcined magnesia added to make a thick milk, is excellent. Any of the above are better than soap.

Paint, mortar and whitewash may be taken off of windows with sharp hot vinegar; if fresh, cold vinegar will do. Diluted muriatic acid will cut them also. Soda dissolved in hot water, and applied with a flannel, will take off paint well; so will camphene and sand—but don't scratch the glass. Ammonia is also used, and a mixture of ammonia and turpentine is good. Scrape it with the edge of a penny or dime.

Old putty on window frames can be easily removed by first passing a red hot iron over it to soften it. Or, apply mixture No. 6 given for removing dry paint on wood. Apply thickly on both sides, and leave on 10 or 15 hours. Or, put on soft soap, and leave it on several hours; it will soften the putty enough to cut readily with a knife.

Tar on glass will be cut by the mixture No. 6 given for removing dry paint on wood. Or, use 3 parts potash and 1 part unslacked lime.

When windows become steamed, or covered with condensed moisture in frosty weather, a very thin coat of glycerine applied on both sides will cure it. If rubbed with a flannel dipped in alcohol it will keep them free from ice.

When a window does not close tightly it is easily remedied by putting some putty along the sill, and some chalk on the sash; then close the window as tightly

as possible. The chalk will prevent the putty from adhering to the sash, and the putty which squeezes out may be scraped away with a knife. This will make it tight.

Window sills which are stained by flower pots can be cleaned by scouring them with fine wood ashes; then rinse thoroughly with cold water.

Mirrors.—These may be cleaned with ammonia and water as explained for windows. Spirits of wine, gin, prepared chalk, whiting and tripoli are all used, and are all good. A muslin bag containing powdered bluing, dusted lightly over the glass while it is damp, and then polished off quickly, produces a fine result. So does whiting. Ammonia is the best thing.

Creases on Mirrors.—Never allow a mirror to be heated by a stove, nor let the sun shine directly on it—the amalgam will be granulated by either, and give the mirror a creased or scratched appearance. This is the cause of the checked appearance of their mirrors which sometimes surprises people.

To Silver Mirrors.—Spread a sheet of tin foil on a smooth table; then rub mercury on it till the 2 metals are incorporated. Lay the plate of glass upon it, and load it with weights, which will press out the excess of mercury from the tin foil; in 2 or 3 days it will adhere to the glass and convert it into a mirror. About 2 oz. mercury are enough to cover 3 square feet of glass. For concave and convex mirrors an amalgam is used composed of 2 parts mercury, 1 part tin, 1 part lead and 1 part bismuth.

Clean the frames of mirrors as explained for picture frames.

Glassware.—*To Anneal Glass.*—Dishes, tumblers, and other glass articles, may be annealed so that they will not readily break from sudden changes of temperature, etc., thus: put them in cold salt water, set on the stove and bring to a boil; let boil a short time, take off the stove, and allow them to cool slowly.

To Wash Glassware.—The best thing to use is soft water, ammonia, and a chamois skin. Wash it with the chamois skin, then rinse it, wring it dry, and wipe with the same skin. It leaves no lint, and the glass will be beautifully bright. Tissue paper is the next best thing to wipe glass with. Alcohol, soda, borax, powdered chalk and whiting are all used and work well, but ammonia is best. Don't use soap—the other things are better.

Stains on Glass.—Stains of tea, lime and other things can be taken off of glass by rubbing with a flannel cloth dampened in ammonia and dipped in whiting. Hydrochloric acid will take off *any* stains from glass, and nothing else is so effective. Take a basin and put in 1 part acid and 4 parts water, and let the article soak in it a few minutes (if very dirty a little longer) and on taking out it will only need rinsing and drying. Be careful not to drop the undiluted acid on the clothes or hands.

For paint stains moisten with washing soda dissolved in warm water; let soak a little while, and wash off. See also "Windows" and "Paint."

Pitch and tar may be cut from glass with a little sulphuric acid.

To clean glass and porcelain vessels from the greatest variety of organic substances, a mixture of sulphuric acid and bichromate of potash is superior to ether, benzine, or anything else. This will also clean photographic glass plates when other things fail.

To clean parian china mix together in boiling water 1 part whiting and 3 parts potash, making it into a thick paste; apply to the china with a soft brush, leave on 3 or 4 hours, and wash off with a sponge and warm water.

China, majolica and earthenware, which is disfigured by little cracks and checks, may be restored by boiling them in milk.

Marking one's name on white dishes, etc., can be done with a pen and common black ink, and it will be some time before it washes off.

China and Porcelain.—If china or porcelain is discolored with iron, muriatic acid will clean it; then rinse off with water.

Porcelain or china which is tea stained or discolored, by careless washing, can be cleaned by rubbing with a flannel cloth moistened with ammonia and dipped in whiting. Or rub with a damp cloth dipped in salt.

Cups discolored brown by using them for baking, can be cleaned with whiting and flannel as above. Or rub with scouring sand or salt.

Carafes and Decanters which have become so discolored inside that shot, sand or fine coals will not cleanse them can be filled with finely chopped potato skins;

let stand 3 or 4 days and the skins will ferment; then rinse with water and the glass will be clear.

A dirty porcelain sauce-pan may be cleaned, and all odors of fish and onions removed, by filling half full of water, putting in a moldy lemon, and boiling for $\frac{1}{2}$ hour. Sal ammoniac boiled an hour or so in a sauce-pan will clean it also.

To remove disagreeable odors from porcelain or china see what we recommend for glass bottles.

Porcelain sauce-pans may be cleaned by filling them half full of water, putting in some borax, and boiling; if any stains are left scour with soap and borax on a cloth; or use whiting, scouring sand, sapolio or brick dust. Repeat if necessary.

A browned porcelain kettle may be nicely cleaned by boiling peeled potatoes in it. If anything becomes burned onto such a kettle, put in wood ashes and water and boil $\frac{1}{2}$ hour; then scour with brick dust or sand; repeat if necessary.

Preserve jars can be cleaned by letting water containing soda or ammonia soak in them. Stains may be removed as advised for vinegar cruets and decanters.

Tumblers.—Do not put tumblers, which have contained milk, directly into hot water, as it makes the milk adhere to the glass so that it is difficult to remove; rinse them first in tepid water.

Glass Globes, to Clean.—Rub them inside with a damp cloth, dipped in powdered pumice stone; rinse and dry with a chamois skin. Borax is also used, but is not so good.

To Clean Vinegar and Sauce Cruets.—Proceed as advised for decanters—3d method.

To Frost Glass.—Take equal parts of Epsom salts and sour beer and boil them together; paint this on the glass while hot. It can be washed off readily when desired.

Imitation of Ground Glass.—Prepare a hot saturated solution of Epsom salts, Glauber's salts, or sal ammoniac. Apply either to the glass with a brush while hot, and on cooling it will form a beautiful and perfect screen. Let the water take up all the salt it will possibly dissolve to make the saturated solution. Four sided prisms will be formed by the Epsom salts; six sided prisms by the Glauber's salts, and thread like crystals by the sal ammoniac.

Decanters. To clean them: (1) Take a handful of tea leaves and 1 or 2 table-spoons of vinegar; shake well together, and put into any furred glass, shake it about and it will clean it nicely. (2) If stained with port wine, put in some crushed egg shells or charcoal, and some warm water and pearlash, to which a little fresh slacked lime is added. Shake it about till the stains are gone. (3) Soak in warm soda and water for hours; then use a brush to scrub the dirt out of the cut work outside. Cut a potato into small dice, put some inside, with some warm water, and shake till the stains disappear; then rinse in cold water and drain until dry. (4) The crust from port or other wine may be cut out with a little muriatic acid, diluted and left in for some time.

Incrustations or Coatings Caused by Hard Water.—These may be removed from a carafe, or any glass, china, or porcelain ware, by rinsing it with water to which a little hydrochloric (muriatic) acid is added; it cuts the alkaline incrustations so that it easily comes off.

Bottles, to Clean.—Make a lye by boiling equal quantities of soda and quicklime. When cold, put this in the bottles with crushed egg shells, small pieces of marble, charcoal or crushed bones, and shake. Coarse sand and tacks are sometimes used, but are liable to scratch the glass. Afterwards rinse and drain thoroughly, then warm, and blow into the bottles with a pair of bellows to dry them. They will be as bright as new. Shot are often used, but as the lead is liable to stick to the glass it is not as good as the other things recommended above. Hot soapsuds is sometimes used in place of the lye but does not leave the glass as bright.

Bottles if oily or otherwise greasy should not be washed with water, but should have some strong alkali, like pearlash, put in them; then wipe them out with tow or cloth on a wire. Diluted nitric or sulphuric acid will also clean oily flasks.

Bottles soiled with resin, turpentine, or resinous varnishes, can be washed with a strong alkaline solution, and wiped out with tow or cloth on a wire. Or use sulphuric or nitric acid.

To Clean a Photographic "Silver Bottle."—Pour in a strong solution of potassium cyanide (a deadly poison), shake a few times, pour out, rinse 2 or 3 times with clear water, and the bottle will be perfectly clean.

To remove disagreeable odors, like those from musk or cod-liver oil, put in some hot olive oil or sesame; also flax-seed meal, or any of the oily seeds, when powdered and mixed with water, answer the purpose excellently. Mustard or bitter almonds will remove many odors from bottles or glass.

Bottles which have contained petroleum should be washed with a thin warm milk of lime; it forms an emulsion with the petroleum and removes every trace of it. If washed a second time with the milk of lime and a little lime chloride added, even the smell will be completely removed.

In packing bottles they may be prevented from breaking by slipping India rubber bands over them, which keep them from touching each other.

To Remove Glass Stoppers.—(1) Tapping the stopper on a piece of wood, first on one side and then the other, will often start it. (2) Dip one end of a cloth in hot water and wrap it around the neck of the bottle; the heat expands the neck and the stopper can be removed, but remove the stopper as soon as the neck expands, and before the heat expands the stopper also. (3) Apply oil, water, or muriatic acid to the top of the neck around the stopper; then warm near the fire for a time. (4) Inverting a bottle for 2 or 3 nights in a pan of water deep enough to cover its neck merely, will often succeed when other means fail. (5) Put vinegar in a tumbler, insert the neck and leave for a while; then apply the hot cloth as above, and it will often start. (6) When hot water is not convenient the neck can be heated enough to release the stopper by wrapping a cord once around and "sawing" back and forth.

Corks.—When corks are too large to go in readily, let them soak in hot water until softened a little. They can be made air and water tight by keeping them for 5 minutes in melted paraffine, but hold them completely under with a screen or other device.

For a water-tight cement for corks, see the rubber cement given among our cements.

To preserve corks from insects, dip the heads of bottles, after being corked, into quicklime, slacked into a paste, and let it harden on. Petroleum is sometimes used, but is not so good.

To Cut Glass.—A simple and easy way to cut glass bottles, etc., is to wind cotton twine around them 2 or 3 times, just below where they are to be cut in two; then saturate the twine with turpentine or alcohol, by dropping it on slowly, and then set it on fire. When nearly burned out, pour on a little cold water. The glass will separate as evenly as if cut with a diamond. Or, make a mark with a file where you want to begin the cut, then take a poker or iron with the end pointed, heat it red hot, and starting at the file mark, draw it along the glass; a crack will follow wherever the iron is carried. Old bottles may in this way be converted into jelly jars, etc. Window glass held *under water*, can be cut with a strong pair of shears, although it is not generally known.

To Pulverize Glass.—Heat it red, and at once plunge it into cold water; the sudden cooling makes it pulverize more readily.

Earthenware and stoneware before being used, should be put in cold water, brought to a boil for a short time, and then taken off the fire and allowed to cool gradually. If, when the water is boiling, some wheat or rye bran is thrown in, it will preserve the glazing so that salt and acid will less readily destroy it.

Crockery ornamented with gilt bands, flowers, etc., should be washed as quickly as convenient, rinsed, and left to drain until dry—it should not be wiped.

Varnish for Earthenware Vessels.—Take equal quantities of soda and pulverized glass, mix and dry it over a strong fire; have the vessel hot also when it is applied.

Spectacles.—Wipe them with an old silk handkerchief or chamois skin, as that will not scratch them. If slightly soiled, breathe on the glass and wipe it; if much soiled, wash with ammonia, which is the best thing to use. Be careful not to bend the frames, as that will alter the focus of the lenses, and the eyes will suffer as a result.

LAMPS, MATCHES, ETC.

Lamps.—A lamp should be kept scrupulously clean. The receiver should be emptied of the old oil occasionally and cleaned out. The best way is to put in hot soda and water and some crushed egg-shells, and shake well; this will clean off all incrustations; then empty it out, and dry it perfectly, for if any water remains the lamp will sputter. When lamps stand for hours half filled or less, an oil vapor rises which mingles with the air in the upper part of the lamp and forms an explosive gas. For this reason a nearly empty lamp should not be lighted. Many of the lamp explosions are caused by ignorance and carelessness in this regard. Fill lamps daily, so that there may be no room in them for this explosive gas, and fill them in the daytime, and not at night near a lighted lamp. An oil lamp should not be filled quite full, nor allowed to burn too low. If the oil has been stored in a cold place and the receiver is filled full, as the oil warms it will expand and run over.

Never turn down a light for economy's sake. Nothing is saved, as the oil will feed up the wick faster than it is consumed, and it will smoke or smell, or both, and become a distinct source of danger, as the lamp heats rapidly. If a dim light is wanted in a sickroom, it is better to set the lamp in another room, or shade it, than to turn it down. When the edge of the flame is orange color, proper combustion is not taking place. Dirty burners, badly-fitting wicks, and neglect about filling are the 3 principal things to guard against. Burn any rags which are used about lamps and thus saturated with oil, to prevent any possibility of spontaneous combustion.

The wick should fit the burner perfectly, and should neither be too thick, too thin nor too narrow; if only a little too wide 1 or 2 threads can be pulled out near the selvage edge without harm. Wicks should be changed often or they will become clogged and prevent the free passage of the oil. They can be washed in strong, hot soapsuds, adding ammonia to the rinsing water, if it is desired to clean and use them again. Soaking a wick in vinegar and then drying it thoroughly before use, will prevent its smoking. A wick clogged with oil may also be cleaned by boiling it in vinegar and water; dry thoroughly before using it. Wicks steeped in a concentrated aqueous solution of tungstate of soda, and then dried thoroughly in the oven, will be almost indestructible. A wick should be long enough to just touch the bottom of the lamp.

The best way of trimming a wick is to turn it down to nearly a level with the wick tube, and then rub across it with the finger or a match; this is better than cutting it with scissors. If the light burns unevenly, it is because the wick is trimmed unevenly. Trim the wick square across, and any little unevenness not removed by the finger can be trimmed off with scissors. Be very careful not to let the charred part of the wick fall into the burner when trimming it.

The burners should be cleaned once a month. Wash them in soap and water, and then boil them for a little while in soda and water. Some people use for this purpose the water in which beans have been boiled, and it answers very well. Then rinse the burners, and dry them perfectly, before the wicks are put in. Nickel burners may be boiled as well as brass ones. Rubbing burners every few days with whiting, or with kerosene on a woolen cloth, will clean them well. The little air holes should be kept open to secure a good draught of air, for a plenty of fresh air is essential to a good blaze. Much of the trouble with student-lamps, and other similar and costly lamps, is that the oil which accumulates in the cup below the wick is not emptied out; it should be done every day to secure a clear flame.

Burn None but the Best Kerosene.—You can test it by pouring a little in a saucer; apply a lighted match or taper, and if it does not ignite readily it is good. Keep oil in a cool, dark place.

When a lamp is lighted turn it up gradually so as not to heat the chimney too suddenly; then turn it as high as it will go with a white flame, and without smoking. When a lamp is put out leave the wick down below the top of the tube; otherwise the oil will work up the wick and run over on the burner and lamp and make them greasy.

Lamp Chimneys and Shades.—If the chimneys are put into cold water to which some common table salt is added, then heated gradually and well boiled

for $\frac{1}{2}$ to 1 hour and then allowed to cool slowly, they will crack less easily and be much more durable. Keep all lamp glasses very bright and clear. Ammonia and water is the best thing for washing chimneys—much better than soapsuds which makes them look dull; if only slightly soiled breathe on them and then wipe. The steam from the nose of a rapidly boiling tea-kettle cleans them well. A piece of sponge on a flexible whalebone is as good as anything for cleaning the inside of either chimneys or lamps.

Smoked lamp glasses washed until the stains are gone in warm soda and water to which a little ammonia is added will look as bright as new. Lamp chimneys which have been neglected and become much spotted and stained may be cleaned thoroughly with hydrochloric or sulphuric acid and soda. For wiping chimneys, newspaper, tissue paper or chamois skin are much better than cloth.

To clean ground glass shades use curd soap, soda and water; scrub them with a nail brush, and it will take off all smoke; rinse them thoroughly with clean tepid water and set aside to drain and dry, but do not wipe them with anything, nor touch them with the hand till dry. Warm them a few minutes by the fire before screwing them in place; handle them with a clean cloth or paper.

After filling and cleaning lamps and chimneys roll up pieces of newspaper in the form of cones and set over them; it will keep off dust and dirt, and when wanted they will be clean and bright.

A cement for lamp tops may be made by boiling 3 parts resin and 1 part of caustic soda, in 5 parts of water. This forms a soap, which when mixed with half its weight of plaster of paris, sets in about $\frac{3}{4}$ hour. It is very adhesive and not permeable by kerosene—it is made much better than the plain plaster of paris ordinarily used. Or, use melted alum; apply as soon as melted; as soon as cold the lamp may be used.

Substitute for Lamps.—The following ingenious substitute for a lamp may be made by any one, and it is especially useful about magazines or where inflammable materials are kept. Take an oblong vial of the clearest and whitest glass, and put into it a piece of phosphorus about the size of a pea. Pour some olive oil, heated to the boiling point, upon the phosphorus, filling the vial about $\frac{1}{3}$ full; then cork it tightly. To use the light, remove the cork and allow the air to enter the vial, and then re-cork it. The empty space in the vial will become luminous, the light equaling that of a lamp. When the light grows dim, renew it by taking out the cork and admitting a fresh supply of air. In winter it may be necessary to heat the vial between the hands to increase the fluidity of the oil. This apparatus may be used 6 months.

Smoked Ceilings.—The smoke of a kerosene lamp may be washed from a ceiling with a strong solution of soda and water.

Matches.—These should be safely guarded and kept in metallic boxes out of the way of children and mice; many accidents will be prevented thereby.

Scratching Matches.—It is very annoying to have heedless people scratch matches on wood work, and when one mark is made others quickly follow, but if the spot is rubbed with a flannel saturated with any liquid vaseline, people can neither light matches there nor scratch the paint, however often they may try; and, singularly enough, the petroleum causes the existing marks to soon disappear, at least on dark paint.

Candles.—A candle which it is desired to burn all night in a sickroom or elsewhere, should have finely powdered salt put on top until it reaches the blackened part of the wick; thus-treated, even a small piece will burn all night, with a mild, steady flame.

In blowing out a candle hold it well above the mouth and blow it out from below, instead of holding it down in the usual way, and blowing it out from above; this will prevent it from smouldering.

To Clean Candlesticks.—Instead of heating them before the fire to melt the grease, pour on boiling water; this will soften it enough to be rubbed off with a rag, without danger of melting the solder or doing other injury; then, if china, wash; if plated, polish with plate powder.

METALS AND METAL WARE.

Aluminum.—Kerosene or tripoli, applied while the vessels are warm, are

about the best things for cleaning aluminum cooking utensils. Discolorations of *any* kind can be removed by putting 4 oz. nitric acid in 1 quart of water, and boiling it hard in the vessel for $\frac{1}{4}$ hour. This metal is not affected by the sulphur compounds which blacken silver so much. It does not rust or corrode, and it retains its luster in the air, whether moist or dry, for any length of time. Hot water produces not the slightest effect on it, but alkaline solutions act on it, and therefore spoons, forks, etc., can be cleaned and whitened with soap; or soap and water made strong with soda, or with liquid ammonia, or with a heated solution of potash. The strong or caustic alkalies consume it rapidly, but as the mild acids, like acetic, malic, citric, or oxalic which are found in foods do not affect it, it is admirably adapted for making cooking utensils. It is without doubt the best metal at present known for that purpose. It is acted on slowly by muriatic acid, but sulphuric or nitric acid does not affect it, unless the nitric acid is very hot.

Brass.—To Clean.—There are a great variety of methods for cleaning brass; we give some of the best and most convenient methods for our reader's use. (1) Rub with strong vinegar; then remove the acid by washing with hot water, and rub with dry whiting. (2) Mix pulverized rottenstone into a paste with oil of turpentine; rub on with a soft leather, leave a few minutes, and wipe with a soft cloth. (3) Dissolve 1 oz. oxalic acid in 1 pint soft water; rub on with a piece of flannel, and polish off with another dry piece. (Use only occasionally.) (4) Use the water potatoes have been boiled in (peels and all); strain it, and wash the brass in it. (Said to be good.) (5) Apply whey or sour milk several times; then scour it with a woolen cloth dipped in ashes. (6) Rub it with rottenstone and oil; finish with dry whiting or ammonia. (7) Pour very strong ammonia over it; then scrub it thoroughly with a brush; in 5 minutes it should become as clear, bright and shiny as new metal; then rinse in clear water and wipe dry. An excellent way to clean old brass. (8) A small portion of sal ammoniac, beaten into a fine powder, moistened with soft water, rubbed over brass ornaments, heated over a charcoal fire, and rubbed dry with bran or whiting, will give them the brilliancy of gold. (9) Use salt and vinegar mixed. For greatly discolored brass kettles, first scour with ashes and soap; then boil the vinegar and salt in the kettle; then rub, and rinse thoroughly. (10) Take 1 oz. oil of vitriol, $\frac{1}{2}$ gill sweet oil, 1 gill pulverized rottenstone, $1\frac{1}{2}$ pints rain water; mix, and shake well when used. Apply with a rag; then polish well with flannel or chamois. (11) Take 1 part starch, 12 parts powdered rottenstone, 5 parts sweet oil, and 2 parts oxalic acid, and mix them all into a stiff paste with cold water. Rub this on with flannel, and polish with a leather.

The great objection made to all the strong acid mixtures used for cleaning brass is that they eat away the metal, which is true. It is objected to the rottenstone preparations, when used about machinery and instruments, that they work into joints, etc., and clog their action.

To Clean Lacquered Brass.—Lay it in hot strong soda and water, and brush it well over with soap. Lift it out and lay it as it is, all soapy, in a pan, and pour absolutely boiling water on it. Let it steep for 1 or 2 minutes, then lift it out and throw it into cold water to enable you to handle it; then dry it carefully. It should require neither rubbing nor polishing. If the brass is very dirty, boil it in the hot soda water.

To Clean Indian Brass.—Use very fine brick dust, moistened with lemon juice.

For Brass Inlaid Work.—Mix tripoli and linseed oil; polish with felt dipped in this mixture. If inlaid in rosewood or ebony use a paste of rottenstone, a pinch of starch, sweet oil and oxalic acid, mixed with water.

To Remove Varnish from Brass.—Much of the brass in use is coated with shellac varnish; this protects the brass while it is unimpaired, but it sometimes gets broken. To remove it, use a cloth wet with alcohol; the brass can be cleaned with this, and a fresh coat of shellac varnish applied.

To Color Brass.—A mixture of muriatic acid and alum dissolved in water imparts a golden color to brass articles that are steeped in it a few seconds.

To Frost Brass-work.—Boil the article in caustic potash, rinse in clean water, and dip it in nitric acid till all oxide is removed; then wash quickly, dry in box-wood sawdust, and lacquer it while warm.

Lacquer for Brass.—(1) Take $\frac{1}{2}$ oz. gamboge, $1\frac{1}{2}$ oz. aloes, 8 oz. shellac (fine),

wine spirit, 1 gallon; mix and dissolve. (2) Take 1 lb. turmeric, 2 oz. annatto, 12 oz. each of shellac and gum juniper; wine spirit, 12 oz., mix and dissolve. (3) Take of seed-lac, dragon's blood, annatto, and gamboge, each 2 oz.; saffron, $\frac{1}{2}$ oz., spirits of wine, 5 pints.

To Clean Scale Pans.—Pour sufficient ammonia in the pan to cover the bottom, and rub briskly until dry with a handful of dry pine sawdust. For very dirty pans, take about 1 drachm potash bichromate, powder it in a mortar, mix with it two or three times its bulk of concentrated sulphuric acid, and add twice as much water. With this rub the pans (having a care for the fingers), rinse well, and finish with rottenstone.

To Remove Lime from Sap Pans.—Muriatic acid, used in the proportion of 1 lb. acid to 1 gallon water (used cold), will cut the scale; it can then be removed with a brush.

To Clean Brass or Copper.—(1) Take lemon peel or pulp, dip it in salt, and rub copper or brass articles with it; rub them immediately afterwards with a dry, soft cloth; waste lemon from lemonade, etc., may be used. (2) Mix together 1 oz. oxalic acid, 6 oz. rottenstone, and $\frac{1}{2}$ oz. gum arabic; all these are to be finely powdered; then add 1 oz. sweet oil and sufficient water to form the mixture into a paste. Apply a small portion to the article to be cleaned, and rub dry with a flannel or wash leather.

Copper and brass articles are not as well adapted to general cooking purposes as many other metals, because even mild acids so readily form poisonous compounds with them. When used they should be kept *scrupulously clean*.

To Bronze Brass or Copper.—(1) Boil the article in a strong solution of nitrate of copper. (2) The repeated application of alternate washes of dilute acetic acid and exposure to the fumes of ammonia will give a very antique looking green bronze.

Brittania Metal.—To clean this, rub the articles first with sweet oil on a piece of flannel; next wash with strong warm soapsuds; rub them dry, and polish with chamois leather and whiting. The polish thus given lasts for a long time.

Bronze.—In caring for bronze ordinarily, careful dusting and keeping free from dirt is all that is required. (1) If *greased or spotted*, wash with a strong warm soapsuds; then rub gently, and dry thoroughly. (2) *Clean it* with spirits of turpentine. (3) A dilute solution of caustic alkalies removes overlying dirt and allows the green patina to become visible. Where the metal was not originally oxydized, the alkali simply cleans it, and does not promote any formation of green rust. (4) *To restore a bronze tea-urn*, turned black in parts, will depend, to a great extent, on the metal and the color. First clean the surface with whiting and water or crocus powder, until it is polished; then cover with a paste of graphite and crocus, mixed in the proportions that will produce the desired color. Heat the paste over a small charcoal fire. If the bronzing has been produced by a corrosive process, try painting a solution of potassium sulphide over the cleaned metal. (5) *If rusted badly*, or much defaced, have it rebronzed.

Bronzing Liquid.—Thoroughly clean the article to be bronzed; then warm it gently, and brush it over with the following preparation: 1 dr. sal ammoniac, 15 grains of oxalic acid, and 1 pint of vinegar, all well mixed together. Rub dry, and then repeat the application till the required tint is obtained.

Lacquer for Bronze.—Dissolve $\frac{3}{4}$ lb. shellac and $\frac{1}{2}$ lb. sandarach in 3 quarts alcohol; add enough extract of dragon's blood and turmeric to produce the desired color.

Bronzing Process for Porcelain, Stoneware and Composition Picture and Looking-glass Frames.—First apply a thin solution of water-glass, using a soft brush; then dust on bronze powder, and dust off any excess not adhering, by a few gentle taps. Then heat it, to dry the silicate, and the bronze will be firmly attached. The bronze may then be polished by burnishing, using preferably agate tools.

Coins.—These can be quickly cleansed by immersion in strong nitric acid, and immediate washing in water. If very dirty, or if corroded with verdigris, it is better to give them a rubbing with $\frac{1}{2}$ oz. pure potash bichromate, 1 oz. sulphuric acid, 1 oz. nitric acid; rub over, wash with water, wipe dry, and polish with rottenstone or chalk.—*Lyle*.

Copper Articles.—(1) Vinegar and salt, mixed, will clean copper. (2) Use soft soap and rottenstone, made into a stiff paste with water, and dissolve by gently

simmering in a water-bath or double boiler; rub it on with a woolen rag, and polish with dry whiting and rottenstone; finish with dry whiting on a chamois skin or flannel. See also "Brass and Copper."

Door Plates.—To polish these without soiling the wood or stone around them cut a hole in a stiff cardboard the exact size of the plate, and slip it over before polishing. The easiest way to clean them is generally to use ammonia and water, and then dry with chamois skin, and then the pasteboard shield is not needed.

Gas Chandeliers and Brackets.—These should be dusted regularly. *To clean them:* (1) If lacquered, wipe them over lightly with a soft flannel dipped in a preparation of equal parts of stale beer and vinegar. (2) If gilded, clean like gilded picture frames. (3) To thoroughly clean a lacquered chandelier take it to pieces, and boil them for a few minutes in a strong soda lye; then brush them over with a soft brush, pass them through a strong solution of potassium cyanide (deadly poison), wash through a tubful of boiling water, dry in clean sawdust, wipe bright with a wash leather and relacquer. (4) The accumulation of grease near the burner can be removed by using the vinegar and stale beer mentioned above.

A Convenient Way to Rebronze Gas Fixtures.—Mix bronze powder with any transparent varnish like amber, gum demar or copal; do not mix more than you are going to use at once. The best way is put a little of the varnish in a small, flat saucer, and some of the loose powder next it, and mix it with the brush as you use it.

German Silver.—*To clean this:* (1) Use whiting made into a paste with water, and rubbed on with flannel; then rub dry with a chamois skin. (2) Rottenstone, rouge or crocus, mixed with sweet oil, and rubbed well on; polish off with a clean chamois skin and dry whiting. (3) Dissolve $\frac{1}{2}$ oz. of alum and $\frac{1}{2}$ oz. of cream of tartar in $\frac{1}{4}$ pint of vinegar; add 1 pint boiling water; wash with this when much discolored. (4) If discolored or spotted with vinegar or other acids, wash it and then scour with sweet oil and rottenstone.

Gilt Mountings.—These articles should not be rubbed; if slightly tarnished, wipe them off with a piece of canton flannel; or, better, remove them, if possible, and wash in a solution of $\frac{1}{2}$ oz. borax dissolved in 1 lb. water, and dry them with a soft linen rag; their luster may be improved by heating them a little and rubbing with a piece of canton flannel. Unless carefully cleaned they soon lose their luster.

Gilded articles of any kind may be cleaned as explained for gilt picture frames (which see).

Gold.—*To Clean.*—(1) Make a solution of 20 drachms lime chloride, 20 drachms soda bicarbonate, 5 drachms common salt, in $5\frac{1}{4}$ pints distilled water; keep in well-closed bottles. Allow the article to be cleaned to remain in this solution a short time (which is to be heated only in case of very obstinate dirt) then take out, wash with spirit, and dry with sawdust. (2) To remove the brown tarnish from colored gold, wet tissue paper in ammonia and rub gently until the tarnish disappears; then wash, rinse, and dry in sawdust. If this does not do it, take it to a jeweler. (3) Polish with rouge and oil on a piece of chamois leather. (Be careful of any jewelry containing pearls, etc. See article on "Care of Jewelry.")

To Clean Gold and Silver Lace.—(1) Take finely crushed stale bread crumbs, and mix it in $\frac{1}{2}$ as much powdered blue; spread this plentifully on the lace and it will soon become bright; then brush off the crumbs with a piece of flannel, and rub with chamois and it will look like new. (2) Clean gold lace by rubbing it with a soft brush dipped in roche alum, burnt, and sifted to a fine powder. (3) Dab silver lace with a paste of heavy magnesium and water; let it dry and brush it off with a soft brush. (4) For either, use a weak solution of potassium cyanide (say 15 grains to 1 oz. of water); apply with a soft sponge and wash off with clean water. The solution is *very poisonous* and must be used with great care. It can be made stronger if needed to clean well.

Iron and Steel.—*To Clean.*—(1) Rust on iron may be removed by rubbing it with kerosene. (2) For Russia iron apply blacking and kerosene mixed, and it will look nearly new. (3) For steel, take turpentine and sweet oil, equal parts, and thicken with emery powder to a paste; rub it on with flannel, and rub it dry with chamois leather. If this is not enough, finish with a little dry emery powder on flannel. (4) For bright steel, mix 1 tablespoon of turpentine and 1 of

crocus powder; rub on quickly, and rub off again as quickly; polish with a chamois leather and it should look bright as a mirror. (5) To take rust out of steel rub it with sweet oil; leave on 1 or 2 days; then rub with finely-powdered unslacked lime until the rust is gone. (6) Make whiting into a paste with a few drops of alcohol; apply thickly, allow to dry on, then rub off and polish with a soft leather. This will remove tarnishes. (7) Mix vienna lime to a paste with alcohol and rub steel or iron with it, using a chamois skin, cork, or piece of soft pine wood. (8) For badly-rusted steel, scour with salt and hot vinegar; then wash off thoroughly with boiling hot water, dry with a flannel cloth, and warm at the stove; then rub with flannel dipped in sweet oil.

To clean guns and rifles which are leaded: (1) Stop up the nipple with a little wax, if it is a muzzle loader, or if a breech loader insert a cork in the breech rather tightly; then pour some quicksilver into the barrel, and put another cork in the muzzle, and roll it up and down the barrel, shaking it about for a few moments. The mercury and lead will form an amalgam, and leave the barrel as clean and free from lead as the day it was new. (2) Wet the tow on the cleaning rod with turpentine; it will remove lead almost as well as quicksilver.

Russia Iron, to Clean.—Take a piece of beeswax about as large as a hickory-nut; shave fine, and cut with $\frac{1}{2}$ pint of gasoline; rub on with a cotton cloth, and polish with flannel. Do not mix or use near a fire.

Russia Iron, to Black and Keep from Rust.—(1) Take $\frac{1}{2}$ pint best black varnish (asphaltum is best); 1 pint black Ceylon lead; add enough spirits of turpentine to mix it into a paint. Apply like other polish to a stove, and rub at once with a brush. Have the iron cold when applied. (2) Melt together 3 parts lard and 1 part resin. A thin coat will keep Russia iron or *grates* from rust when not in use, even in damp places. Good also for *steel, copper or brass*.

Steel Ornaments, to Clean.—(1) Rub them with a mixture of paraffine oil and emery; then rub them with putty powder sifted through muslin, and mixed with a little oil. (2) Lime moistened with water and placed on the ornaments as a paste for 12 hours, and then brushed off, is a good restorer.

To Preserve Steel from Rust.—(1) Dissolve white beeswax in benzole; paint this on the article; the benzole evaporates leaving a thin coating of wax on the steel. Keep the solution in a tightly corked bottle as it is very volatile. (2) First, clean the article, then dust it over with powdered quicklime, and leave till wanted for use. *Coils of piano wire*, thus covered have kept for years. Applicable to any bright iron or steel goods. (3) Iron blades immersed in a solution of carbonate of soda or potash, and then exposed to a damp atmosphere will keep from rust for three years. (4) Melt 1 oz. resin in 1 gill linseed oil, and while hot, pour on them 2 quarts of paraffine oil. Apply this mixture with a rag or soft brush. (5) Mix with mutton fat $\frac{1}{2}$ pint of oil varnish, $\frac{1}{8}$ pint of well rectified spirits of turpentine. Apply this varnish with a sponge. Metals thus varnished will retain their metallic brilliancy and not contract rust. (6) A thin, even coat of sweet oil applied to steel surfaces keeps them from rust. (7) Melt pure mutton suet, dip in the steel of *knives, forks*, etc., let it cool, wrap tissue paper around them, then cotton flannel or thick paper, and they can be stored indefinitely without rusting.

To Clean a File.—Pour on some benzine, and rub it with a stiff or scratch brush.

Swords, etc., may be rubbed with powdered brick dust and oil; rub dry with brick dust; polish with crocus and leather.

To Keep Steel Ear-rings, Brooches, Etc.—First clean, and then keep in powdered quicklime and they will suffer little from rust. Unslacked lime is an excellent thing to clean steel articles with.

To Polish Iron or Steel.—Mix 2 oz. fine emery with 1 oz. soft soap; rub iron or steel with this on wash leather, and it will give it a fine polish.

To Remove Paint from Iron.—Use a paint softener made of 1 lb. lime, 4 lbs. potash and 6 quarts water. Excellent.

To Prevent Iron from Rusting.—Warm it till you cannot comfortably hold your hand on it; then rub it well with clean white wax; heat it again until the wax has soaked in; then rub the iron with a piece of coarse cloth, and in future it will not rust.

Galvanized Iron Articles.—These are best cleaned by scouring them with a strong solution of hot water and common washing soda. Galvanized iron attracts soap in such a way as to cause a deposit which is disagreeable and unsightly; hence it is better to use tinned vessels for holding any soapy solutions.

A Word of Caution.—In galvanized iron vessels, water readily acts on the zinc coating, and forms a *poisonous oxide of zinc*. Hence for drinking water, or for any cooking purposes, galvanized iron utensils of any kind should never be used.

Pewter.—Keep pewter vessels free from damp; wipe well, and dry before the fire after use. *To clean:* (1) Make a paste of whiting and kerosene or sweet oil; rub with a flannel dipped in this paste. (2) Wash in hot water with fine silver sand; then polish with soft leather. (3) Scour with fine emery on flannel or chamois. (4) Use a paste of rottenstone and oil, with just a little ammonia added. First wash the article with soap and water, then rub with this paste, and then polish with soft leather.

Nickel.—To clean this use whiting, mixed with ammonia, water, or kerosene; rub it on with a flannel; then rub dry with a clean flannel or chamois skin. Rouge also polishes it well, and common soda cleans it well.

Silver and Plated Ware.—Hot soapsuds will make all silverware look dull—a little ammonia in the water used for washing it is much better. For cleaning silverware: (1) Ammonia and alcohol are both excellent; rub either on the article, then polish with a little whiting (sifted thoroughly free from all grit) on a chamois skin. (2) One of the simplest and best things is to lay the silver in sour milk or buttermilk; it will take off all sulphur stains, etc., and make it look like new. (3) East Indian jewelers use a little lemon juice, and no plate powder whatever. (4) Save the water in which potatoes have been boiled; it is better if salted, and also if kept a few days until sour; use it hot, rub the silver with it, rinse, and polish with chamois. (5) A rag or brush moistened with a saturated solution of soda hyposulphite cleanses even strongly oxydized silver surfaces in a few minutes, without the application of any powder; then rinse it off and polish with a clean chamois. It is cheap and easily applied.

Plate Rags for Daily Use.—These are convenient, and may be prepared as follows: Boil soft rags (nothing better for this than the tops of old cotton stockings) in a mixture of new milk and hartshorn powder, in the proportion of 1 oz. of powder to 1 pint of milk; boil for 5 minutes; wring them for a moment in cold water, as soon as they are taken out, and dry them before the fire. With these rags rub the plate briskly as soon as it has been well washed and dried; a most beautiful deep polish will be produced. Better to use than powders.

Egg and Mustard Stains.—These may be removed from silver spoons by using a damp cloth dipped in salt.

Stained and Spotted Silverware.—Whenever silver plate from long standing and neglect is stained and spotted so that it is not readily cleaned by the usual plate powders, mix 1 part sal ammoniac with 16 parts vinegar; rub the stains or spots gently with the mixture and they will soon disappear. Then wash well with soap and water.

To Remove Ink Stains from Silver or Plated Ware.—Rub with a paste of chloride of lime and water; then wash well, and wipe.

To Clean Silver Dress Trimmings.—If slightly tarnished cover them with dry magnesia; leave it on for 2 hours, then rub it in, and brush it off with a hard brush. If they are very dirty the magnesia must be first used wet, and then dry.

Good Polishes for Silver or Plated Ware.—These may be made as follows: (1) Alcohol and whiting (freed from grit) mixed together makes a simple and excellent plate powder, or use ammonia and whiting mixed; apply it, let it dry, and then rub it off with chamois skin. (2) Take 1 oz. each of cream of tartar, muriate of soda and alum; boil them in 1 gal. or more of water. It gives silverware a beautiful silvery whiteness.

If any plate powder is used in cleaning silverware it must be carefully brushed out of the chased work with a soft brush.

A Caution.—Many plate powders contain quicksilver; all such powders are injurious and should never be used.

Mercury or quicksilver when applied to silver or gold disorganizes the metal and makes it very brittle; the remedy is to heat the metal in an alcohol or gas

flame; the mercury evaporates and the metal is as good as ever. Then polish off the tarnish.

When *silverware is laid away*, wrap it first in tissue paper, and then in unbleached cotton flannel; then wrap it in stout wrapping paper or an oil silk bag, and as nearly air tight as possible, to exclude the gaseous vapors and dampness found in most houses. Camphor gum wrapped in the cotton flannel with the silver helps keep it bright. Flannel or woollen should not be used to wrap up silver, as these contain sulphur which tarnishes it.

A *silver tea or coffee pot* not in daily use should have the cover propped open a little, when it is put away, by laying a little stick across the top; this will admit the air and prevent its becoming musty; by rinsing it with a little boiling water it can then be used at any time at once.

To Plate with Silver.—Take 1 part precipitated silver powder, 2 parts common salt, and 2 parts cream of tartar; mix these ingredients well together, and rub well on the article to be silvered; then wash it lightly in alkalinized water. Silver may thus be applied to any metal, and old plated candlesticks, cruets, etc., may be greatly improved in appearance.

Tinware.—Never use acids to clean tinware; they attack the metal and remove it from the iron on which it forms a thin coat. To clean tin: (1) Saturate a cloth with kerosene, dip it in whiting and scour with it. The best way. (2) Blackened ware may be scoured with a damp cloth dipped in soda; then rinse, and wipe dry. (3) Rub with rottenstone and sweet oil; finish with soft leather. (4) Use kerosene oil alone. (5) Use whiting dry, or moistened a little. (6) Moisten the tin, rub on dry flour with the hand, and then scrub till bright with newspaper. (7) To clean tinware after it has held petroleum, scrub with hot water and soap.

Keep all tinware perfectly dry; it soon becomes tarnished in moist air.

To Prevent Rust on Tin.—Rub thoroughly with lard, covering every part; then heat it well in a hot oven. Even if used constantly in water, this will protect it for some time.

Musty coffee or tea pots, or pie-plates, pots or pans that have been used to bake in and have become rancid, may be made sweet and clean as follows: Take cold water and add either wood ashes or soda; then put this in the article, or the article in this, as the case may be, and bring it to a boil; boil for a time, then let it cool, and scrub thoroughly with hot soapsuds, using a small scrub brush; then scald in water a couple of times, rinse and dry.

New tinware, before being cooked in, should have soda water boiled in it; then wash it with soapsuds, rinse, and dry it thoroughly.

A Caution.—Because of the readiness with which salt, acids, etc., attack tinware, it should be used cautiously in cooking.

Constant scouring of tinware with ashes, rottenstone, whiting, etc., wears it out; if washed ordinarily with hot water and soap, and about once a week with hot water and soda, it will need scouring rarely.

To Remove the Lids from Tin Cans.—First start the solder by placing live coals on top; an old case knife will then remove the lid; be careful not to start the side seam.

To Mend Tinware.—Scrape and clean the parts, rub on powdered resin, lay on solder, and hold a hot poker or soldering iron on it. Or, clean the spot, apply soldering fluid, place a piece of bright tin of the required shape over the hole, melt some solder in an iron spoon, and pour it around the edges. Or, cut tin foil the required size; wet the surfaces with a feather dipped in sal ammoniac; heat with a hot iron till the tin foil is melted. Or, scrape the place clean, apply soldering fluid, lay on a piece of solder, and hold over a lamp till the solder melts and fills the hole. It is quite easy to mend tinware, and people in the country will find it a great advantage often to be able to mend their own ware. People in towns can send to a tinsmith more easily.

A Soldering Fluid.—This is easily made by taking a glass bottle, putting in hydrochloric acid, and adding small pieces of zinc until it will dissolve no more. Apply it with a stick when ready. Do not get it on the clothes or hands.

A good solder for tinware is the lining of tea chests, as it is made of tin and lead in about the right proportions.

Lacquer for Tin.—Put 3 oz. of seed-lac, 2 drachms of dragon's blood, and 1

oz. of turmeric powder into a pint of well rectified spirits; let stand 2 weeks, agitating at least once each day; then strain through muslin. Apply it to tinware which is intended to imitate brass.

Any good lacquer laid on tin gives it the appearance of brass or copper. Color lac varnish with turmeric, which will give it the color of brass; or with annatto which will give it the color of copper.

Japan for Tinware.—(1) Mix 8 oz. oil of turpentine, 2 oz. copal varnish, and 1 drachm of camphor. (2) Use common copal varnish. Either of these may be colored with lampblack or vermilion, and will then make a good japan.

Wire Table Ware.—This can be kept bright by washing in water, using a soft cloth and a little soap; it will not need scouring if properly cared for. Whiting is excellent, if anything is used.

Zinc.—*To clean zinc:* (1) Dip cotton cloth in kerosene and rub the articles; then rub dry with another cotton cloth. (2) A quick process is to use creosote or glycerine, mixed with a little dilute sulphuric acid. (3) The water in which codfish has been soaked is good for scouring the zinc under the stove. (4) Lime water will clean zinc well. (5) Dilute hydrochloric acid will clean small zinc articles quickly. Rub large articles, like refrigerators, with raw spirits; then rinse with water, and finish with whiting. (6) Take $\frac{1}{2}$ lb. powdered pumice stone, 2 oz. emery powder, $1\frac{1}{2}$ quarts soft water, 1 oz. nitric acid; shake together well before using. This answers well for tin also.

Polishing Materials.—Whiting used dry, or moistened with water, is good for almost any unlacquered metal, even silver plate. Rottenstone mixed with oil, or flour of emery, used either dry or mixed with oil, are suitable for almost any metal not lacquered, except silver or gold. Rouge, dry, or mixed with oil, is best for gold or silver. Lime is good for steel articles.

An Excellent Polishing Powder.—Thoroughly mix 6 oz. of carbonate of magnesia with 1 oz. of Paris rouge (oxide of iron). Apply it with a soft cloth, dampened in alcohol or water, and rub till nearly dry; then polish with chamois skin to finish. This powder was first made by Thomas Weigler, the German chemist, and has been sold under various high sounding names. It is suitable for either gold, silver, iron, steel, copper or tin. Excellent.

Plate Powder.—Take 3 lbs. gilder's whiting, 2 oz. white castile soap, 1 oz. aqua ammonia, $\frac{1}{4}$ oz. olive oil, 1 gill warm water. Dissolve the soap, and add $\frac{1}{2}$ the whiting and the other ingredients; mix well, and then add the remainder of the whiting; mix stiff—if too stiff add more water. Make into cakes. Use on tin, copper, silver, nickel, mirrors, etc.

Care of Jewelry.—*To clean gold jewelry,* wash it in a basin of soft water to which a little ammonia or baking soda has been added; use a soft tooth-brush and good soap. Then rinse off, and throw into a box of sawdust—boxwood is best. Shake up, and when dry take out, shake off the sawdust and wipe with a chamois skin. It will look beautifully bright. *Pearls* should never be washed in this way, however, as it may injure them.

Tarnished Gold.—This may be renovated by applying warm spirits of wine with a soft brush or flannel, and its brilliancy will be restored again.

To Clean Pearls.—(1) Soak them in warm water in which bran has been boiled, with a little salts of tartar and alum, rubbing them gently between the hands; when the water is cold renew the application till any discoloration is removed; rinse in lukewarm water, and lay them on white paper in a dark place to cool. (2) For ordinary cleaning, when not much soiled, wash them with a soft brush in lukewarm water containing just a trace of ammonia. (3) Put them on a clean linen cloth, scatter on salt, tie up the cloth with a string, and sop it in lukewarm water (not hotter than that) till the salt is dissolved and washed out; then take them out, rinse in clear water, and dry with a soft flannel cloth.

Pearls.—These should be kept in dry, common magnesia, instead of the cotton wool used in jewel cases. Kept in this way they will never tarnish nor lose their brilliancy. Pearls are the most delicate of stones and require careful treatment. They will be spoilt if exposed to much heat; vinegar or acids quickly destroy them. Never wear them when engaged in housework.

To Clean Diamonds, Emeralds, or any of the brilliant precious stones, apply precipitated sulphur, moistened with spirits of wine, and rubbed with a

soft brush. Or, clean them with ammonia, the principal thing being to get them perfectly clean.

Jet jewelry may be mended with black sealing wax.

To Clean Coral Jewelry.—Wash it with hot water, with good soap and soda; then rinse clean, and when dry rub with chamois leather.

Artificial Coral.—Melt clear yellow resin, and, while melted, mix in thoroughly the best vermilion, in the proportion of 1 part vermilion to 4 parts of resin. Stones, twigs, raisin stalks, etc., dipped in this, will look like coral when cold.

Silver Ornaments.—These are best kept in fine arrowroot, and completely covered with it. For cleaning silver ornaments see "Silverware" and "Silver Lace."

STOVES, CHIMNEYS, FIRES, ETC.

Stoves.—Never fill a stove with coal above the top of the linings, and keep it free from clinkers. When the coal is put on for the night do not close the stove at once, but let it burn till the coal is warmed through; then close it up and there will be no escaping gas; nor will the fire go out. Never let the ashes accumulate in the ash-pan until they reach the grate—that will burn it out. Run a range so as to get all the heat needed without having the top red hot; that will warp the covers, and if a little water strikes them they will crack. Keep a stove well blacked. In buying a stove, furnace, or any heater, get one large enough to heat up readily in the coldest weather, so that ordinarily it will not be run to its full capacity. It will wear longer and be more economical. Buying too small a heater is a common mistake.

A range or cooking stove placed opposite a door or window will be subject to draughts which will prevent the oven from baking well; hence arrange a place for it elsewhere, if possible. To cook well, keep an even, steady fire. To let it die down is poor economy as the heat is wasted, on adding fresh fuel, until the oven or stove is brought up to the right temperature for cooking. Clean out the slides under the oven of a cooking stove as often as once a week—twice a week is much better if there is much cooking to be done. With a properly regulated fire, this will insure uniform results, and the oven can be relied on to bake well. The inside of a range, including the oven flues, ought to be cleaned regularly at least once a month.

To get the best results out of a stove or range, and to economize both fuel and time, requires intelligent treatment. Every woman should understand the principles on which her stove is constructed and its scientific management. Preserve and study the card of directions which goes with every range. Observing the following rule will save coal, and 1 hod of coal will often last 6 hours without replenishing: When the fire begins to burn, close the smoke damper; as soon as most of the coal is bright, close the other dampers. If, however, a very hot oven is needed leave open the slide at the bottom of the grate. When less heat is needed in the oven, or on top of the range, open the checks and close the drafts; when more heat is needed reverse the process, *i. e.*, close the checks and open the drafts.

Most cooking stoves are altogether too low. If they were raised on a box or platform to the height of the kitchen table, or a little higher, it would save many a back-ache. Try it, sister, and see.

Blackening Stoves.—A stove well cared for will not need blacking more than once a month. Then clean off the old blacking with kerosene before applying the fresh coat. Then black it well, and wipe off with a clean rag. Always keep a cloth at the side of the stove to wipe up grease spots before they burn in. Each morning, while the fire is coming up, go over the stove with a polishing brush. In this way you will have a fine appearing stove always.

Where blacking will not stick to a stove burned red, if a little vinegar, or fat fried from salt pork, is added to the water used to dissolve the blacking, it will adhere all right; or, wet the red parts and let them rust a little; then the blacking will adhere.

In blacking a stove there are various simple additions which improve the result: (1) Use turpentine, or turpentine and a little sugar, to mix ordinary blacking. It prevents rust and makes the polish more durable and glossy. (2) Mix

the polish with soapsuds; or shave good hard soap into the polish and boil them together. (3) Mix the polish with vinegar and just a little sugar. (4) After blacking a stove apply linseed oil with a woolen rag, and keep a slow fire till it dries. It prevents rust and gives a lasting varnish. (5) Mix the blacking with cold coffee instead of water. (6) Mixing the blacking with gasoline also improves the polish, but that is so *very* explosive that it should never be used when there is a *particle* of fire.

A stove blackened when entirely cold will retain its luster much longer than one which is blackened while warm.

To Make Stove Polish.—(1) Take 1 lb. black lead (pulverized), 1 oz. sugar, 1 gill turpentine, 1 gill water. Mix. This is the preparation used by stove manufacturers. (2) Mix water-glass and lampblack to about the consistency of syrup; apply a thin even coating with a stove brush, and let dry for 24 hours. Then apply an even coat of gum water, mixed with either black lead or graphite; now with a polishing brush rub briskly in the usual way, and a durable and beautiful polish will result.

To Clean a Dirty Stove.—Rub it when cold with stove polish mixed with alum water.

To polish the nickel parts of a stove use a flannel rag and whiting wet with kerosene or water; or, an old woolen cloth, dampened and dipped in the softest white ashes.

The stove urn should be kept nearly filled with water as long as the stove has any fire in it. It is an excellent plan to put a small bag of charcoal in the urn, and change the charcoal every week.

When clinkers gather on the fire brick in stoves or ranges, put a few oyster shells on top of the hot coals, and put a little coal on them; they will, as they burn down, scale off the clinkers.

To Clean the Mica in Stoves (often mistakenly termed "isinglass").—This may be cleaned as good as new by washing it with vinegar, or with vinegar and salt mixed.

Cracks in stoves may be stopped with various cements. One, easily made, is to mix fine wood ashes, salt and water into a paste or mortar; apply while the stove is hot. Another and more durable filling can be made by mixing sal ammoniac and iron filings or turnings with water. Yet another is made with equal parts of finely sifted wood ashes and powdered clay, mixed with water and a little salt. Apply while the stove is cold. Others are given in our article on "Cements."

To prevent rust in stoves when put away for the summer: (1) Apply linseed oil as explained in our 4th method for blacking stoves. (2) Mix blacking with kerosene or sperm oil instead of water, and black the stove with this. (3) With a rag, apply a good coat of kerosene oil to both pipes and stoves on taking them down, and store them in a dry place.

When a stove pipe begins to rust check it at once by rubbing it with linseed oil; dry it then by a slow fire.

To Preserve Grates and Bright Steel Fenders from Rust: (1) Make a strong paste of fresh lime and water; with a fine brush smear this as thickly as possible over all polished surfaces requiring preservation. All the grates and fire irons in an empty house may thus be kept for months free from harm. (2) Rub bright steel fenders and fire irons with mercurial ointment, and leave all bright parts well smeared with it. (3) Rub them well with sperm oil, after which apply unslacked lime. Wrap the fenders in paper to keep off dust. (4) Melt in front of the fire a piece of raw mutton fat (the loin fat is best) and rub it thickly all over bright fenders and fire irons; then do them up in several thicknesses of brown paper. The fat must be raw, not cooked, and melted only just enough to rub on well.

Clean steel grates when necessary, like any other steel — see our article on "Iron and Steel."

To clean the soot out of a stove-pipe throw some pieces of zinc on the hot coals in the stove; the vapor produced will, by decomposition, carry off the soot, it is said.

It is said that a common brine of salt and water, poured over soft coal, will prevent the accumulation of soot in the chimney, and in the lower parts of the stove which burns it. We never tried it.

Furnace pipes should be thoroughly examined every fall. Holes are liable to rust through them, and the heat will escape through these rusted holes instead of passing along in the pipes to warm the rooms.

A Hint.—A strong tin box, with a handle and cover, in which to put the stove brushes, polish, stove cloths, etc., will be a great convenience; it can be carried about from room to room, and when thus stored away the shelves will not be soiled with the blacking, etc.

Fires and Fuel.—*To start a fire* in a grate crumple up pieces of paper into soft balls, instead of laying them in flat, and put these in a layer touching each other. Then lay on 3 or 4 small sticks of perfectly dry wood an inch or two apart; then 3 or 4 more across the other way, and so on alternately, according to the size the fire is to be. This allows openings for a good draught, which is absolutely essential in starting a fire. Then lay on small lumps of coal, as large lumps do not ignite so readily, touch a lighted match to the paper below, and you will soon have a good fire. In starting a fire in a stove or range proceed in much the same way, leaving openings in the kindling wood for a draught. If a little coke is kept on hand to use in starting a fire, it will be a great convenience. Only a little is needed; it lights readily and makes an intense heat.

Never shake a fire which is almost out—that will finish it. Turn on the draught instead, and as soon as it starts up a little, add a handful of small coals on the red spot; in this way you can revive a fire almost out. When a coal fire is low, to let out the ashes from below or heap coal on top will put it out.

To deaden a coal fire, press down the mass from the top so as to make less room for air to draw through it.

To revive a fire in a grate put on the blower, and as it starts a little put on small pieces of coal gently until it is well started.

When starting a fire in damp, still weather, place on top of the grate pieces of lighted paper or shavings; they will blaze up quickly, heat the air in the chimney and create an upward current which will help in starting the fire, and will draw the smoke away from the room.

When low, a tablespoon of salt thrown on a fire will help it. A little sugar will revive dying embers and give a bright flame at once. Old corks, and thoroughly dried orange and lemon peels, make excellent fire revivers.

Never pour kerosene oil on a fire to revive it—it is too dangerous, and your friends are not ready to bury you yet.

Never throw away cinders or half-burned coal; they are worth as much as coal, measure for measure. Sift them out of the ashes, wet them, and burn them. Added to a coal fire they will make it hotter than fresh coal, and keep it hot longer. To throw them away is a pure waste.

During the fall and winter every room in the house should have a fire kindled in it at least once a week, to prevent dampness.

Fire Kindlers.—Melt over a slow fire $1\frac{1}{2}$ lbs. of resin, and add either 1 pint of tar, or 5 oz. of tallow; while hot stir in as much as possible of fine sawdust, or sawdust and pulverized charcoal mixed—either is good. Then spread it out, about an inch deep, on a board sprinkled with charcoal, to cool. When cold, break into lumps about as large as hickory-nuts. They will light readily and burn for some time.

Burning Buildings.—When a house takes fire every one should remember to shut all doors, as open doors allow flames to spread too rapidly. Keep the windows closed also. If hemmed in up-stairs by fire, do not jump from a window until the last resort. Tear up bed clothes or clothing and make some kind of a rope, tie one end to a heavy piece of furniture, and let yourself down by it. If a room is full of smoke and flame crawl on the floor, as there is less smoke near the floor. As a ready protection against breathing smoke wet a handkerchief or towel and fasten it around the face over the mouth and nose.

A fire will be extinguished immediately if a solution of pearlash and water is thrown upon it.

Fire Hand Grenades.—(1) Take 20 lbs. common salt, 10 lbs. sal ammoniac, 7 gallons water. Mix. Put this into thin bottles holding about a quart, and seal up. If a fire breaks out throw these bottles into the flames hard enough to break them. (2) Fill thin quart bottles with a strong solution of common salt. Throw them violently into a fire when it first breaks out and they will check the flames.

Fireproof Solution.—Dissolve boric acid in a hot solution of tungstate of soda, which makes a salt called borotungstate of soda; materials impregnated with this solution are rendered perfectly fireproof.

A Chemical Heater.—Mix 1 lb. of soda acetate with 10 lbs. of soda hyposulphite. Fill a sheet copper or other metallic vessel, such as a foot warmer, with the solution, and seal it up. When desired for heating purposes place the vessel in hot or boiling water, till the contents are quite fluid. It possesses the property of giving off the heat very slowly, and may be used as a source of warmth for 12 to 15 hours. It is adapted as a foot warmer, muff-warmer, etc., and where a fire is not admissible.

Chimneys.—These should have the interior surface as smooth as possible, and to obtain the best draughts they should be kept clean. Smoky chimneys are very generally caused by being below the level of some adjacent building, or other object which obstructs the free passage of the wind. In this case the trouble will be noticed when the wind is in certain directions. The most reliable remedy is to raise the chimney to the required height by brickwork or pipe, although a cowl or hood will often overcome the difficulty. Leaks, holes or fissures in chimney's will cause sluggish draughts. If 2 fireplaces draw into one flue, provision should be made for closing either one when not in use; it is better for each to have a separate flue.

Ordinarily the chimney is the best ventilator, at least when the fire is burning, which keeps up an upward draft. When there is no fire, however, they often admit a current of cold air which draws down them.

When a chimney takes fire, shut all doors and windows and throw sulphur on the fire in the stove or grate—if thrown on the grate put a board before the opening to prevent the fumes from coming out into the room. The brimstone fumes ascending the chimney will extinguish the flames. If sulphur is not convenient shut stove doors and hang a blanket in front of the grate to check the draught as much as possible, and throw salt on the fire; this will deaden it down. Never pour water down the chimney—it will spoil the carpet; throw down salt instead.

Leaks about chimneys may be stopped up with the fireproof cement given among our cements, or with one of those given for stopping cracks in a stove.

PAINT, VARNISH, WHITEWASH, ETC.

Paint.—Before painting woodwork all grease spots should be removed, or the paint will not adhere. To remove the grease spots there are various ways. (1) Apply whitewash; leave on one night and wash off in the morning. When fully dry apply the paint. (2) Use a little wet slacked lime instead of the whitewash. (3) Wash it with soda water, rinsing well afterwards. (4) Scour off with a little marble sand.

If any soapsuds is used it should be washed off thoroughly, or the paint will not dry hard. Have the wood *dry* before applying the paint. When painting eat acid fruits, and thoroughly air and ventilate the rooms.

In giving 3 coats of paint, use about 1 lb. paint to the square yard on new woodwork. It is said that oil paint put on in the autumn lasts longer than when applied at any other season, but we do not vouch for that. Before applying paint stop up nail holes, etc., as explained under "Nails" (which see).

The drying of paint is largely dependent on the temperature. Below the freezing point paint will often stay wet for weeks, while the same paint if exposed to a heat of 120° F., will become solid in a few hours. A good supply of fresh air is essential. An open fire in a newly painted room is only beneficial when the temperature is low; as a rule it retards rather than helps the drying, because of the carbonic acid gas it gives off. A first coat should be thoroughly dry before another is put on.

To make old paint which is "sticky" become hard and dry, first apply a coat of benzine; leave it on 36 or 48 hours. Then take 3 parts lacquer and 1 part boiled oil; mix, and apply a light coat, if the paint is good; if it is thin, mix in more lacquer and put on another coat.

To Remove Dry Paint from Wood.—(1) Apply a strong solution of oxalic acid (a poison). The paint soon softens. (2) Wet with naphtha as often as re-

quired; as soon as it is softened rub the surface clean. (3) Use chloroform mixed with a small quantity of spirits of ammonia composed of strong ammoniac. (4) Use a paste made of potash and strong lime; cleanse the surface afterwards with vinegar. (5) A handful of lime put into a pail of strong soda and water, well stirred, and laid on the paint, will soon soften old paint; it can then be scraped off easily. (6) Apply a thick coat of 2 parts freshly slacked lime, and 1 part sal soda, mixed thick; wash off after 24 hours. Clean with vinegar.

To Remove Paint on Glass.—(1) Dissolve common washing soda in hot water; apply it to the paint hot, and let it soak a short time (if thick, 30 minutes) and wash off. Repeat if needed. Good. (2) Scrape off what you can with a knife; then rub with a cloth wet with alcohol. (3) Use turpentine and ammonia mixed, or either alone if you have not the other. (4) Take 3 parts potash, and 1 part unslacked lime; lay on with a stick and leave some time; it will remove either tar or paint.

Cleaning Paint.—Paint should be more often brushed than scrubbed; too frequent scrubbing causes it to decay. Use little soap and wash it off with plenty of clean water to prevent discoloration. Soda, pearlash and ammonia all injure paint if allowed to remain on; it is better not to use them at all, but if used they should be immediately rinsed off with clean water, and the paint rubbed dry with flannel. For washing paint there is nothing better to use than old worn flannel. Do not have the water too hot. The woodwork inside a house should all be washed over twice a year. We present the following methods for cleaning unvarnished paint: (1) Wet the paint with warm water; then rub with a damp flannel dipped in whiting; rinse off with clean water and rub dry with chamois. This is much better than soap, is easily used, saves the paint, and makes it look like new. (2) For paint much soiled use whiting and ox-gall mixed together to a batter. Rub on with a flannel; rinse off with cold water, rub dry with a soft cloth. The unpleasant smell of the gall will soon go off. (3) Dissolve $\frac{1}{2}$ oz. glue, and a bit of soft soap the size of a walnut, in about 3 pints warm water; scrub this on with a well worn whitewash brush, but not enough to start the paint; rinse with plenty of clean cold water, using a wash leather; let it dry itself. Work done in this manner will often look like new. (4) Mix 1 tablespoon of skimmed milk, 2 tablespoons of turpentine, 2 quarts hot water, and soap enough to make a suds; this cleans well and adds luster.

To Clean Oiled and Varnished Woods.—Wring a flannel cloth out of lukewarm soft water, and wipe them off.

Grained Wood is best washed with cold tea, and for dark colored paints this is one of the most convenient and effectual things there is; then rub it with flannel cloth.

For flower-pot stains on a window-sill, see "Windows."

To Destroy the Smell of Fresh Paint.—(1) Shut up the room closely, and place in the middle of it a pan of lighted charcoal on which some juniper berries have been thrown. (2) Leave in the room a pail of water containing some new hay; or place hay on the floor and sprinkle it with water in which chloride of lime has been mixed.

Leave several pans or pails of water during the night in a newly painted room, and in the sleeping rooms adjoining, and the deleterious effects of fresh paint will be nearly overcome; the material it absorbs will be seen on the top of the water in the morning. Do not sleep in a freshly painted room.

To Prevent Paint from Smelling.—Dissolve some frankincense in spirits of turpentine by simmering over a clear fire; then strain and bottle the mixture. Add this to any paint, and, if too thick, thin with turpentine.

Paint Which Resists Moisture.—Take 6 gallons fish oil, 1 lb. of sulphur, $\frac{3}{4}$ lb. resin; melt and mix all together thoroughly; color as desired with ochre or other colors, and use a little linseed oil; apply while hot with a brush; have first coat very thin—then lay on several more. May be applied to either wood or stone.

A good and cheap paint for iron fencing, rough woodwork, etc., is made by mixing yellow ochre into tar; it will be green in color.

Light colors, as is well known, reflect the heat, while dark colors absorb it; for this reason light colored paints are best to use on tools, etc., much exposed to the sun.

Luminous Paints.—Several bodies possess the property of absorbing a cer-

tain amount of light and then emitting it slowly. Calcium sulphide is the most important of these, and it has been mixed with paint where the light is desired. It is very feeble, however. If something of the kind is desired, heat strontium theo-sulphate for 15 minutes over a good Bunsen gas lamp, and then for 5 minutes over a blast lamp. For use, mix it with pure melted paraffine, and expose it to the sunlight for a time. In the dark it will emit a greenish phosphorescence. It can be applied to clock dials, etc.

Paint Brushes.—*To soften brushes* that have become hard, soak them for 24 hours in raw linseed oil, and rinse them out in hot turpentine, repeating the process until clean. *To wash the brushes*, use hot soda and water and soft soap. If paint brushes have a hole bored in the handle and when not in use, are hung above an open necked bottle or can, containing oil, so that the bristles are immersed up to the binding cords, they will keep clean and be ready at any time for use.

To keep a new brush from shedding its bristles or shrinking, turn it bottom up; then spread open the bristles and pour in a little good varnish; keep it bottom up till dry, and the varnish will "set" around the bristles and bind them fast.

Varnish.—Lay on varnish carefully, with a good even stroke, applying a smooth and regular coat; let it stand in a moderately warm place to dry, that the varnish may not chill.

To Remove Varnish.—(1) Scrape with sandpaper, and then use spirits of ammonia; it is a rather slow process. (2) Cut the varnish with spirits of wine and turpentine mixed.

To Remove Spots on Varnish.—See our directions for taking spots off of varnished furniture in the article on "Furniture."

To clean varnished surfaces, as well as dark colored paints or graining, wash it off with cold tea; then polish with a chamois skin. Never use hot water on varnish. For a fuller explanation of the treatment of varnished surfaces see our article on "Furniture."

When varnish is "sticky" it may be remedied by first applying a coat of benzine; leave it 48 to 72 hours; then lay on a coat of good varnish. Do not use the article until it is thoroughly dry.

Do not use ammonia on varnish, as that turns it white.

For a white varnish, take 6 oz. white wax, 1 pint oil of turpentine; dissolve by a gentle heat.

For a cheap oak varnish, take $3\frac{1}{2}$ lbs. clear, pale resin, 1 gallon oil of turpentine, dissolve it. This may be colored darker by adding a little fine lampblack.

For a sealing wax varnish dissolve sealing wax in spirits of wine, and apply the solution (well shaken up) with a soft brush; the spirits of wine will evaporate, leaving an even coating of sealing wax.

For a shellac varnish, dissolve 1 part shellac in 7 or 8 parts of alcohol. If too thick add alcohol; if too thin add shellac. Keep in a bottle. It dries quickly and is good to varnish almost anything with.

Colorless Varnish.—Take $2\frac{1}{2}$ oz. bleached shellac and let it dissolve in 1 pint of rectified alcohol; then heat 5 oz. animal bone black, mix in thoroughly, and boil all 5 minutes; test it by filtering a little through filtering paper; if not colorless put in more bone black and again boil; then filter it all through silk and filtering paper. It can be used as soon as it cools, for whitewood, labels, paints or any spotless article.

The Varnish Brush.—As the beauty of varnishing depends largely on the brush, care should be taken to select one that is suitable. The best way to keep a varnish brush when not in use is to bore a hole in the handle as advised for paint brushes, and suspend it above a narrow tin pot containing the kind of varnish last used, immersing it up to the binding cords but no higher. Brushes kept in turpentine are apt to get hard and harsh.

Calcimine.—Before applying a new coat of calcimine wash off the old one. It can be done with a sponge and a pail of water, or moisten and scrape it off. *To prepare calcimine*, soak $\frac{1}{2}$ lb. of white glue over night in cold water; in the morning heat it until dissolved. Mix 10 lbs. whiting in hot water and then mix and stir the 2 together; dilute to about the thickness of cream, with warm water. The glue can be left out if skimmed milk is used in place of the water. Apply it with

a calcimine brush, which produces a better result than the coarser brush used for whitewash. If there are cracks in the ceiling, fill them before applying the calcimine with the wall cement given among our cements. The smoke from a kerosene lamp may be washed from a ceiling as explained under "Lamps."

Calcimine can easily be tinted any desired shade. The following are a few of them: For a *buff* tint, use 2 pints Indian yellow, and 1 part burnt sienna. For *blue*, use a little Prussian blue; a dark blue shade is never advisable. For *brown*, use burnt umber. For *grey*, use raw umber, with a little lampblack. For *lavender*, prepare a light blue, and then shade it a trifle with vermilion. For *lilac*, use 2 parts Prussian blue and 1 part vermilion; mix thoroughly, and don't get the color too high. For *straw*, use chrome yellow and a very little Spanish brown. *Remember*, that delicate tints are always in better taste and more agreeable than vivid colors; also, that when laid on they always look brighter than when in the calcimine pail. Ceilings should be a little lighter than the walls. Accomplish this by calcimining the ceiling first; then add a little more color and go over the walls.

Whitewash.—Slack about $\frac{1}{2}$ bushel of unslacked lime with boiling water, keeping it covered during the process. Strain it, and add 1 peck of salt dissolved in warm water; 3 lbs. ground rice put in boiling water and boiled to a thin paste; $\frac{1}{2}$ lb. powdered Spanish whiting, and 1 lb. clear glue dissolved in warm water; mix these well together and let the mixture stand for several days. Keep the wash thus prepared in a kettle or portable furnace, and when used put it on as hot as possible. This will answer for either wood, brick or stone, and retains its luster for a long time. It is the formula recommended by the U. S. Treasury Department to all lighthouse keepers. It can be colored, if desired, to any shade. A little lampblack added makes a *slate color*; lampblack and Spanish brown, a *red stone color*; yellow ochre or chrome yellow a *pretty cream shade*, etc.

For common work a mixture may be used of $\frac{1}{2}$ bushel of lime slacked with boiling water, and add 1 lb. of common salt, $\frac{1}{2}$ lb. of sulphate of zinc, and 1 gallon of sweet milk. This is cheap, easily made and excellent, and if applied once a year, or even oftener, to unpainted fences and outbuildings, whether of wood or stone, it will preserve them, and conduce to the healthfulness of the premises. Many people do not realize the value of a good coat of whitewash. This may be colored to any desired shade by using yellow ochre, lampblack, burnt umber, Prussian blue, etc.

No brick wall which is ever intended to be painted should be whitewashed. All washes absorb water, and in damp weather lose their color. For 1 barrel of color wash, take $\frac{1}{2}$ bushel white lime, 3 pecks hydraulic cement, 10 lbs. umber, 10 lbs. ochre, 1 lb. Venetian red, $\frac{1}{4}$ lb. lampblack. Slack the lime, cut the lampblack with vinegar, mix well together, add the cement, and fill the barrel with water. Let it stand for 12 hours before using, and stir frequently while putting it on. This is light stone color, but may be changed by using more or less of the colors named above, or any others. Only 1 coat of this is needed. A rough board barn washed with it, will look well for five years. The cement hardens, but on a rough surface will not scale.—*Scientific American*.

PICTURES AND FRAMES.

Pictures.—In hanging pictures be sure the cords are strong enough. There is nothing stronger than copper wire; or use the cords containing wire. In buying cord get that as near the color of the wall as possible. The effect is better to put engravings between chromos and paintings than to hang the latter side by side; and it is better not to hang water colors near colored pictures like paintings and chromos. Pictures should not be hung so that the shadows will come near the window; it may spoil the effect of a good picture, because the side that needs the light will not get it. When hung directly opposite a window the reflection of the light from both glass and frame may nearly hide the picture. Do not hang pictures or chromos so that they are exposed to the direct rays of the sun, nor, on the other hand in a dark room, as darkness fades some colors rapidly. Have a good light, therefore, but not strong sunlight.

Attend to the condition of the wall against which a picture is hung. A

slight amount of dampness will produce brown or mildewed spots on an engraving or any kind of paper mount, while it produces a slight film of mildew on an oil painting. On the other hand an oil painting should never be hung on a wall through which a hot flue or chimney passes, which heats the wall considerably, as after a time curious spots, lines and patches make their appearance, and if the picture has ever been restored the places become painfully apparent. When pictures hang flat, it is a good plan to have a piece of cork fastened behind each corner, which will keep the frame a small space from the wall, and promote free ventilation behind them. Only heavy gilt frames should be used for oil paintings.

An oil painting should have its face dusted with an old soft silk handkerchief; this is much better than a feather duster. Occasionally (perhaps every 2 or 3 months or so) it should be dry cleaned, using an old silk handkerchief, although some use a pad of soft cotton-wool. Brush it lightly and quickly, and an occasional breath on the surface helps the process. A slow touch with a silk handkerchief is apt to make the surface look greasy. Do not press heavily, nor strain the canvas in the least. When spots or discolorations are observed, or a picture has become very dirty, it must be taken down and cleaned carefully. Choice pictures which show signs of mildew, cracking, etc., should be taken to a professional restorer, rather than to attempt handling them at home.

To Clean Oil Paintings.—There are various methods. (1) First wipe off the dust with soft silk; then dip the finger in a little linseed oil contained in a saucer, and gently rub the painting. This method requires time and patience, but it is safe, and it produces gratifying results. (2) In restoring pictures the great thing is to do as little as possible. They can be washed with warm water and sweet milk, and then dried carefully. Do not rub them hard. (3) First examine the picture to see that there are no cracks, or bits of paint likely to peel off; then take an old soft cloth and some white of egg, and wash the surface, a square inch at a time, with a spiral motion of the hand, not pressing too heavily. If very dirty mix some bread, molasses and new milk in a basin, adding a trifle of turpentine; wash it with this, using soft flannel and a sponge; afterwards use the white of an egg. (4) If care is taken not to let water through cracks, nor wet the backs, castile soap can be used on oil paintings, although as a rule it is not advisable. (5) Raw potato has an almost magical effect on oil paintings, and is sometimes used to clean them. First wipe off the dust with a soft silk cloth; then rub it with the raw potato; lightly and evenly, and wipe off the lather with a soft rag. Manipulate it carefully. The dirty surface of the potato must be constantly trimmed off, to keep a clean working surface. Afterwards rub the picture over with clean nut or linseed oil.

Varnish for Pictures.—Put into a bottle 2 parts alcohol and 1 part best coach varnish; shake well; they will separate unless they are shaken every time they are used. To use, pour a little in a cup and spread it on quickly with a camel's hair brush, as the alcohol speedily evaporates. If necessary, after the first coat has dried apply a second, and draw the brush the opposite way in applying it. Keep it clear of dust while drying; this gives a beautiful polish, not affected by cold water used to clean it, nor by steam.

To Clean Chromos.—(1) Use a soft cloth, moistened in cold tea; then polish them with a little oil. (2) Dust them carefully, and then wipe them with a soft linen rag or chamois skin, moistened slightly. Finish by rubbing with a touch of oil on a chamois. Apply a thin coat of mastic varnish if the old coat is dull or defaced.

Varnish for Chromos.—For chromos not previously varnished prepare a size by dissolving isinglass in lukewarm water, making it the consistency of starch. Apply, lightly, a smooth coat of this with a flat varnish brush; when quite dry, lay on, in a warm room, one or more coats of Demar varnish; shield carefully from the dust until dry. Thus varnished they can be safely wiped off at any time, and will be much more durable.

Frames.—*To Clean Gilt Frames.*—(1) Blow off the dust. Then beat up the white of eggs and add common washing soda, in the proportion of 3 oz. egg to 1 oz. soda; brush this with a soft brush, over the frame. This will also clean and brighten all gilded articles. (2) Mix 1 gill of water, 1 oz. of common salt, 1 oz. alum, and 2 oz. purified nitre. Spinging with this mixture will brighten them if ever so dirty.

Black Walnut or Other Dark Colored Frames.—If varnished, these may be cleaned with cold tea, and then rubbed up with a good furniture polish. If oiled, and not varnished, clean them first with cold tea, then rub with a little linseed or kerosene oil.

White Frames.—If varnished these may be cleaned like other varnished frames; if not varnished, clean carefully with whiting and water, and then rub with a chamois skin.

New Gilt Frames should be given a coat of white varnish. It improves their appearance, makes them last much longer, and fly specks can then be washed off without injury. This also improves old frames.

To Keep Flies off of Frames.—Sponge them over with onion water. Boil 4 or 5 onions in a pint of water; when cold, apply it; it will not injure the frames. Applying laurel oil will also keep off flies.

To Restore Old Gildings.—(1) Form cotton wool into a tuft as large as a nut, dip it in strong liquid ammonia, and carefully apply. If the gold is not worn off it restores it fairly well. (2) To patch or retouch a gilt frame apply to the abraded spot a size, made by dissolving isinglass in alcohol; when partially dry, lay on gold leaf; leave it till fully dry; then burnish with a hard burnisher. (3) Take 1 quart of water, add enough flowers of sulphur to give it a golden tinge, boil 5 or 6 onions in it and strain. Apply to the part that needs restoring with a soft brush, when cold. The onions will keep off flies, and the solution will brighten the frame.

To Regild Picture Frames.—Take some parchment gold-size, and water gold-size; warm them and mix together till fluid; paint this over the picture frame with a soft brush; when dry, apply a second coat; when that is dry rub gently with *fine* sandpaper. Have ready some book gold-leaf, warm it before the fire, rub some white wax upon a piece of writing paper; pick up the gold leaf with the waxed paper and lay it gently on the frame, and continue fixing leaves till the frame is covered, but always overlap one leaf over another; then press the gold-leaf to the frame very gently. Let it dry; then pass a clean brush dipped in water over the surface to carry away any superfluous gold-leaf. Cover the gilding with a coating of warm parchment size, and it will be finished.

The Glass Over Pictures.—This should be washed with ammonia and water, and wiped dry with chamois skin or tissue paper.

When it is desired to clean the glass without taking it out of the frame, and the frame is made of silk or other material easily soiled, bend pieces of tin at an angle, thus  and set these over the frame with one edge resting on the glass and the long arm protecting the frame; then wash carefully with soft water and ammonia, and rub dry with tissue paper or chamois skin.

The Picture Cord.—To hang pictures copper wire is the best thing to use, adapting the size to the weight of the picture; if cord is used buy that made for the purpose with wire in it.

Engravings, Mezzotints, Etc.—*To Clean.*—Engravings or prints which have been laid in any of the following baths, may be laid on a clean board or strips of clean smooth cloth to dry. Sometimes prints are dried by laying them between sheets of clean blotting paper, and keeping them under pressure till dry. If necessary they may be ironed with an ordinary flat-iron to restore the gloss, placing clean paper between the iron and the print. Sometimes, before being dried, they are placed in a very weak solution of isinglass or glue, to act as a size; a little coffee or tobacco added to the solution will give a yellow tinge when that is desired. Great care should be exercised in handling prints while wet, so as not to tear them. They are easily handled with a little care.

For cleaning prints there are various methods, the following being among the best: (1) If engravings are very dirty, take 2 parts salt and 1 of soda, and pound them together very fine. Lay the engraving on a board, and fasten it with drawing pins; then spread this mixture, dry, equally over the surface to be cleaned. Moisten the whole with warm water and a little lemon juice, and, after it has remained a minute, or even less, tilt the board up on its end, and pour over it a kettleful of boiling water. Avoid rubbing and be careful to remove all the mixture. If the engraving is not very dirty the less soda used the better, as it has a tendency to give a yellow hue. Then treat as above directed. (2) Prepare a solution in the proportion of $\frac{1}{2}$ lb. lime chloride to 1 pint water; let it stand,

with frequent stirring, for 24 hours; then strain through muslin, and finally add 1 quart water. Engravings, prints, and every description of printed matter, may be immersed in this solution; mildew and other stains will quickly disappear. The sheets must then be passed, separately, through clear water, as the lime chloride if left in the paper will cause it to rot. Dry as above directed.

To remove surface dirt from engravings and mezzotints, the most effectual plan is to use bookbinders' paste; apply it with a paste brush to both the front and back of the print; the paste will take up the whole of the dirt, which will come away with the paste; remove that by immersing the print in a bath of plain water; it will come out as fresh as new. This plan is simple but efficacious, and many a dollar has been earned by it. Dry as above directed.

Superficial markings, from lead pencils, etc., may be removed by rubbing the surface with fresh cut bread, in circular sweeps, lightly but firmly performed.

Small grease spots may be removed by placing powdered French chalk over them, a piece of clean blotting paper over the chalk, and a hot iron over that. Do not have the iron too hot, or it may turn the grease dark.

To remove ink stains, berry stains, etc., see the article on "Books and Paper."

BOOKS AND PAPER.

Books.—It is one thing to buy books; it is quite another to intelligently care for them. The following rules are well worth preserving by every one who handles books:

Never hold a book near a fire.
Never lean or rest upon an open book.
Never turn down the corners of leaves.
Never touch a book with damp or soiled hands.

Always keep your place with a thin book mark.

Always place a large book on the table before opening it.

Always turn leaves from the top with the fore or middle finger.

Never touch a book with a damp cloth or sponge.

Never rub dust from books, but brush it off with a soft dry cloth or duster.

Never close a book with a pencil, pad of paper, or anything else between the leaves.

Always open a large book from the middle, and never from the ends or cover.

Always keep a borrowed book neatly covered with paper while in your possession.

Never try to dry by a fire a book accidentally wet, but wipe off the moisture with a soft dry cloth and let it dry slowly.

Never cut the leaves of a book or magazine with a sharp knife, as the edge will run into the print.

Never lend a borrowed book, but return it directly you get through with it so that the owner may not be deprived of its use.

Always have a good index or catalogue of the contents of your library.

Books which are placed in a library should be thoroughly dusted 2 or 3 times a year, not only to keep them clean and fresh, but also to prevent any development of insects and to disclose signs of dampness. The interior of a book also requires care, though often neglected. On taking a book from the shelf, before opening it see if there is dust on the top edge. If it has trimmed edges blow off the dust, and then dust with a soft duster; if the edges are uncut, brush with a rather hard brush. In this way the dust will be kept from sifting into the book. If books are packed too tightly on the shelves their backs will be broken when they are taken down. Nothing spoils books more quickly than laying them open, face down, to preserve the place.

Bookshelves should be covered with a dust sheet before a room is swept. Books which are not kept under glass may be guarded to some extent from dust by having strips of leather or cloth 2 or 3 inches deep, nailed along the edges of the shelves; also lay sheets of brown paper, a little wider than the books, along their tops. At the annual housecleaning, books should be taken down and beaten, first singly and then in pairs, and carefully dusted; then the shelves should be washed, scrubbed and thoroughly dried, before the books are put back.

The 3 great enemies of books are insects, damp, and rats and mice. Everyone knows how to guard against rats and mice. To preserve books, warm, dry air is required; dampness and *excessive heat* must be avoided. The more they are read the more easily they are preserved. It is said that the reason Russia leather never molds and is not affected by damp is because it is perfumed with tar of birch tree. Book cases or shelves made of cedar, cypress, sandalwood, or any strongly aromatic wood, are a protection to books against insects. The Romans

preserved valuable manuscripts with oil of cedar. Bindings brushed over with spirits of wine are preserved from mildew, and libraries may be preserved from the effects of mold and damp by using a few drops of any perfumed oil. Alum used in the bookbinder's paste, has a preservative effect, while oil of turpentine is much better. Aniseed, bergamot, or anything strongly odoriferous, mixed in paste, preserves it indefinitely from the attacks of insects.

Grease Spots.—These may be removed from the covers of bound books by laying fine pipeclay, magnesia or French chalk on both sides, and applying a hot iron; but take care that it is not too hot. Colored calf-skin may be treated the same way. Vellum covers which need cleaning may be made almost equal to new by washing with a weak solution of potash binoxalate, or, if not much soiled, with warm water and soap.

Paper.—*Berry Stains.*—These may be removed from engravings, books or paper by subjecting them to the fumes of sulphur, or of sulphur matches.

To Remove Grease Spots from Paper.—(1) Lay some fuller's earth, powdered chalk, blotting paper or magnesia on the paper, both above and below the spot; set on a hot flat-iron to melt the grease and it will be at once absorbed. Do not have the iron too hot, however, or the paper will be discolored. Or (2) place a blotting paper underneath, and moisten the spots with a camel's hair pencil dipped in rectified spirits of turpentine; when dry, moisten with a little spirits of wine, which will remove any stain left by the turpentine.

To Remove Oil Stains from Drawing Paper.—Apply a solution of pearlash in the proportion of 1 oz. pearlash to 1 pint water.

To Remove Ink Stains from Paper (including that of books or engravings).—Use a solution of oxalic acid, citric acid, or tartaric acid; apply the solution, then dry with blotting paper. These acids remove writing ink, but do not affect printing ink. Javelle water will also take out ink stains. These preparations will also remove the *blue lines* from writing paper. These can be ruled in again, if desired, by using ordinary bluing, mixed with water, and a little ox-gall added to make it flow.

Finger or Thumb Marks on paper are often difficult to erase, the dirt being of a greasy nature and forced into the fibers of the paper. Remove slight stains with rubber or bread crumbs; for the more difficult ones apply a jelly made of white or curd soap, leave it on some time and then immerse the paper in cold water and then gently brush it off with a soft brush; then rinse it in a weak acid water, and then again with cold water and size it again when dry.

To Remove India Ink from Paper.—To remove a blot of this apply water with a camel's hair brush; leave on a few seconds, then make as dry as possible with blotting paper, and then rub carefully with India rubber. Repeat, if necessary, till all is gone. For lines, circles, etc., dip the ink leg of the instruments in water, open the pen rather wider than the line, and trace over the ink, using blotting paper and India rubber as for a blot; applicable to drawing paper, tracing paper, and tracing linen. If the surface is a little roughened thereby, polish it with your finger nail.

To Split a Sheet of Paper.—Paste a piece of cloth to each side of the sheet to be split. When perfectly dry, violently and without hesitation pull the two cloths apart; part of the paper will adhere to one, and part to the other. Wet and soften the paste, and the two pieces can be easily removed from the cloth. If there is only one copy of a newspaper article, and it is desired to paste it in a scrap book, it is convenient to know how to split it, and the process can be utilized in various ways. It will work if managed skillfully.

To Take Creases out of Drawing Paper or an Engraving.—Lay it on a sheet of smooth, unsized white paper, face downwards; then lay on top of it another slightly dampened sheet of the same paper, and pass a moderately warm flat-iron over it all.

To Prepare Oiled Paper.—Brush the sheets over with boiled oil, in which a little shellac has been carefully dissolved over a slow fire; suspend them till dry.

To Make Waterproof Paper.—Dissolve 8 oz. alum and $3\frac{3}{4}$ oz. castile soap in 2 quarts water; in another jar dissolve 2 oz. gum arabic and 4 oz. glue in 2 quarts water; mix the solutions, heat slightly, dip in the single sheets, and hang up to dry.

Waterproof Pasteboard.—This may be prepared with a mixture of 4 parts

slacked lime in 3 of skimmed milk, with a little alum added. As soon as mixed, brush the pasteboard over with 2 successive coatings; it becomes impervious to water.

To Make Transparent Tracing Paper.—(1) Saturate ordinary writing paper with kerosene and wipe the surface dry. Or (2) dissolve $\frac{3}{4}$ oz. white beeswax in $\frac{1}{2}$ pint turpentine; saturate the paper with this, and let dry 2 or 3 days. (3) Spirits of turpentine or benzoline will make paper transparent while wet with it; when dry it will be again opaque.

To Make Paper Fireproof.—Prepare a strong solution of alum, steep the paper in it, and hang it up to dry. If not effectual the first time, repeat.

Parchment Paper.—Take sulphuric acid, and mix in $\frac{1}{2}$ its weight of water. A sheet of common writing paper dipped in this solution becomes somewhat like parchment, and for writing on is superior to animal parchment. It is fibrous, tough, hard, and waterproof.

Manuscripts, when almost illegible, may be renovated by washing them very lightly and carefully with a very weak solution of ferro-cyanide of potash in clean water. The writing will again appear.

To Restore Faded Writing.—Moisten the paper with water, and then brush it over with a solution of sulph-hydric ammonia. (See also the article on "Restoring Obliterated Ink.")

Scent for Note Paper.—Take $1\frac{1}{2}$ oz. powdered starch, 4 drops attar of roses, $\frac{1}{2}$ oz. powdered orris root; mix together, and put it in little silk bags to be kept in the writing desk.

When patterns or papers roll, they can be flattened and smoothed by holding them before a hot fire without waiting to heat an iron.

Playing Cards, to Clean.—Mix a little butter and flour into a paste, and rub the cards with it, using a piece of clean soft flannel; then rub them with flour alone on a clean piece of flannel.

Parchment and Vellum.—Benzine, applied with a sponge, will remove almost every stain, and does not injure the texture in the least. On no account must parchment be washed in very hot water, or held before a fire, as it will shrivel up provokingly. Acetic acid is sometimes used to take out stains, but it injures the gloss and leaves the parchment hard when dry, so that it is not a very successful plan.

To Make Parchment Transparent.—Soak a thin skin of it in a strong lye of wood ashes, often wringing it out till it becomes transparent; then strain it on a frame and let it dry. When dry, a coating on both sides with clear mastic varnish, diluted with spirits of turpentine will improve it.

Wall Paper.—Old paper should be removed from the walls before new is put on. It can be taken off easily by wetting it with saleratus water. Then brush over the walls with a weak solution of carbolic acid. The odor will soon disappear, and it will purify the walls and drive away insects. Should there be too much whitening on the walls, wet them with clear water, and scrape with a scraper. Then apply a thin coat of sizing made by dissolving common glue in water.

In selecting wall paper striking contrasts should be avoided; choose neutral tints and colors which harmonize with the surroundings. Good taste may be displayed even if the paper is cheap. If the ceilings are low, paper with figures running perpendicularly will make them appear much higher. Before laying on the paper, if dirt or grease spots appear on the wall they should be washed off with weak lye. After papering a room no fire should be made in it for several days, or until the paper is perfectly dry. In buying paper get an extra roll—it will be useful later for repairs.

For suitable pastes to use see our article elsewhere on "Pastes."

To Clean Old Wall Paper.—(1) Blow off the dust with a bellows, and then take a loaf of stale bread (rye is best) cut it into pieces and, beginning at the top, go around the room, using the soft side of the bread and rubbing downwards, about 2 feet at a stroke. Rub lightly or you will rub the dirt in. Keep going round in this way, and working down, until the paper is all gone over. This will remove dust, smoke, whitewash, etc., and make the paper look almost like new. (2) Another excellent way to clean wall paper is to put about 2 quarts of wheat bran in a coarse flannel bag, and rub the wall as above directed. (3) Rubbing old wall paper with a flannel cloth dipped in dry cornmeal, or oatmeal, will much improve its appearance.

A long handled brush, long enough to reach the ceilings, is as important to a good housekeeper as a broom. Brush the walls over in straight lines before sweeping; use either the brush itself, or have it covered with a clean soft cloth. This will keep the paper fresh and clean a long time. When the paper is only slightly soiled brushing it over with a broom or brush covered with clean calico cloth will make it look fresh and bright. It is easier than the use of stale bread which is best when the paper is very dirty. Change the cloth as often as it gets dirty.

To Remove Grease Spots.—Lay blotting paper over them and press with a hot flat-iron; this melts the grease, and the blotting paper absorbs it. Do not have the iron too hot.

To Remove Oil Stains or Marks Where People Have Rested Their Heads.—Mix pipeclay or fuller's earth to the consistency of cream, lay it on the spot, leave it till the next day, and remove it with a penknife or brush it off. If any trace remains repeat the operation.

To Make a Size for Wall Paper.—Break up some glue small and put it into a pail; pour water over it and let it soak for a day. Then add more water and boil up till dissolved; strain it through a cloth and try it on the paper. If it glistens it is too thick; if it soaks in it is too thin. Have plenty of size on the brush and apply very lightly for the first coat. Give 2 coats of size, and when dry varnish with pale varnish.

To Detect Arsenic in Wall Papers.—(1) Turn down an ordinary gas jet to a pinpoint, until it is wholly blue; then take a strip of the suspected paper one-sixteenth inch wide, and 2 or 3 inches long; when the edge of this paper is brought in contact with the outer edge of the gas flame a gray coloration (if arsenic is present) will be seen in the flame. The paper is burned a little, and the fumes given off will have a garlic-like odor, due to the vapor of arsenic acid. Now look at the charred end and it will be a bronze red. Place the charred end a second time, not too far in the flame, and the flame will be colored green. By this simple means, without apparatus, the presence of arsenic may be detected. (2) Or another method is to put a little strip of the suspected paper in a small saucer and cover it with ordinary household ammonia; after standing a few minutes a piece of lunar or stick caustic (nitrate of silver) should be dropped in; if a yellow precipitate forms arsenic is present, and the paper is not fit to use. It is generally thought that only green colors contain arsenic, but in fact paper of any color may contain it. The only safe way is to take a sample and test, or have it tested before buying. If there is any question, refer it to a chemist, and make the dealer pay the fee. You can't afford to run risks in such a matter. Arsenic papers are certainly very injurious to the health.

An Easy Way to Repair Small Breaks in Wall Paper.—A better and more satisfactory way than patching the paper, is to touch in the broken spots with paint. A set of children's paints is good for this purpose. Mix the tints until the same shade is obtained as the broken spot in the paper, and it will hardly be noticed. Several colors can be worked in if needed.

Holes Broken in the Plaster.—These may be repaired by taking equal parts of plaster of paris and the common white sand used in families for scouring purposes; mix them to a paste with water. Fill the holes with this, and smooth it off with any flat or ordinary kitchen knife; it will speedily dry, and can then be papered over. If mixed with vinegar instead of water it will not "set" so quickly.

Fill cracks with the wall cement given among our "Cements."

To remove the smoke of a kerosene lamp from a ceiling see "Lamps."

Gilt Cornices.—To Clean.—Wash them with warm milk, and polish with chamois skin.

LEATHER.

Castor Oil for Leather.—Old leather can be partially renovated by being impregnated with castor oil, and new leather preserved thus, better than by any other process. It will render old boots soft and pliable and will not prevent them from taking blacking. It will double the wear of driving belts used on machinery, and will make old fire hose soft as new. It will also preserve the leather from the attacks of rats and insects.

Moldy Leather.—Remove the surface mold with a dry cloth, and with another cloth apply pyroligneous acid.

Mildew on Leather.—Rub it gently with vaseline, to remove it.

To Clean Buff Colored Leather.—Dissolve 1 oz. oxalic acid in 1 pint of water; wash well with this, and then rub on a little clean tallow.

To Clean Morocco Leather.—(1) Sponge the leather over with warm, soapy water to remove all dust and dirt, and then rub it over with a piece of clean cloth dipped in glaire. (2) Strain the leather well over a board, and scour well with a stiff brush, using tepid water and soft soap, made slightly acid with oxalic acid; do not saturate the leather, but keep the board inclined to let the water run off; when done, unstrain the leather and dry it in a cool place; when dry, rub a little oil lightly over the surface with a rag.

To Restore the Luster of Morocco.—Take a sponge, dip it in the white of an egg, and varnish the leather over.

To Make Leather Vermin Proof.—Apply castor oil mixed with tallow.

Acids on Leather.—All acids and acid preparations destroy the life of leather.

For preserving its life nothing better has ever been found than castor oil.

Patent and enameled leather will stick together if the glazed sides are placed together in warm weather. To separate them when thus stuck place the leather in a drying or other hot room; when hot they can be separated without injury; or spread them on a tin roof on a hot day and they will soon heat enough to separate. Any attempt to separate them without heating to a high degree will spoil them.

To Tan or Cure Small Skins with the Fur On.—(1) Clean off the flesh thoroughly, and then spread butter all over the flesh side, and then tramp on them or otherwise work the butter *thoroughly* into the skin, until it is pliable and thoroughly cured. Skins thus treated are soft, pliable and very satisfactory. (2) Take $\frac{1}{4}$ lb. alum, $\frac{1}{4}$ lb. sulphate of soda, 2 oz. sulphur, 3 oz. sulphate of potash, 3 oz. salt; mix all in 1 quart of water. Spread this on the flesh side, fold the skin in the middle flesh to flesh; leave thus 3 or 4 days, and then hang up to dry. It will be soft, pliable and well tanned. The above amount will do for 1 dogskin, sheepskin, calfskin, etc. Double the amount for a small hide for a robe; heavier hides in proportion. (3) For a sheepskin for a rug, boil the skin in a suds containing a little sal soda; then soak over night in a solution of $\frac{1}{2}$ lb. each of alum and common salt, with just enough water to cover. Then tack it to a smooth surface, flesh side out, to dry, and while damp sprinkle it with powdered alum and salt-petre. In a few days scrape it with pumice stone, when it will become soft and pliable. Line with heavy flannel, and scallop the edges, allowing these to project enough to give a pretty ornamental finish to the rug.

To Make Glaire.—(1) Whip up the white of eggs and allow it to stand; pour off the clear liquid and that is what is used. (2) Beat the whites of eggs with an equal quantity of water, and add a little sugar candy.

To Make Leather Waterproof.—Coat it with a solution of India rubber and boiled linseed oil.

To Wash Chamois Skin.—Rub plenty of soft soap into the skin, and then soak it for 2 hours in a weak solution of soda and warm water; then rub till it is quite clean, and rinse well in a weak solution of warm water, soda, and yellow soap. If rinsed in clear water alone it will become hard; it is the little soap left in the lather which enables it to become soft like silk. After rinsing, wring well in a rough towel, dry quickly, and then pull and brush it thoroughly. It will be better than most new leather, and this is the best way to clean it. *Chamois jackets* or any chamois article can be cleaned this way.

Care of Boots and Shoes.—By taking a little care of boots and shoes they can be made to wear much longer, and they will always look better. Do not use much of the dressings so fashionable for ladies' and children's shoes—most of them crack the leather and ruin it. Do not leave shoes kicking about when not in use, but on taking them off, air them a while, brush off the mud or dirt, oil or polish them, put them in a box or shoe bag, and when wanted they will be in good condition. The family shoe bill can be reduced $\frac{1}{2}$ by a little intelligent care.

Acid Blackings.—These are generally used for boots and shoes until every particle of oil in the leather is destroyed. To remedy this, wash off the blacking and apply castor oil; then set away for 1 or 2 days. This will renew the elasticity

and life of the leather and prevent its cracking. *Oil blackings* are best for boots and shoes, as acid blacking destroys the life of the leather.

Care of Kid Boots.—For an excellent polish beat up the white of an egg with an equal quantity of water and a little sugar candy; if well made it is quite transparent and not at all sticky. It is good for all fine leather, especially kid. Touch up kid boots with a mixture of castor oil and ink. The ink blackens and the oil softens them, and keeps them in fine condition. Or, to restore the color, mix a little good polish blacking with the white of an egg, and apply.

To Clean White Satin Shoes.—These should be kept closely wrapped in blue paper—they will not bear exposure to the air. When slightly soiled, they may be cleaned with stale bread or cornmeal; if very dirty, wipe lengthwise of the satin with a clean flannel dipped in spirits of wine, or with gasoline.

To Clean Patent Leather Shoes.—Wipe off mud, etc., with a sponge moistened with lukewarm water and afterwards rub with a soft cloth or old silk handkerchief. Rub occasionally with a little milk, or sweet oil, and soft cloth. Black and polish the edge of the sole in the usual way, but without covering the patent leather top. Patent leather cracks easily when cold, so it should be kept warm.

To Clean Tan Shoes.—Dissolve a tablespoon of salt in warm water; mix with it 1 pint cold water, in which 1 oz. salts of lemon has been dissolved. Wash the boots or shoes with a little of this preparation and dry them *well*. Polish them off afterwards with soft flannel, or an old silk handkerchief.

To Clean Top Boots.—Clean the lower part in the usual way, but protect the top by inserting a fold of cloth under the edges and bringing it up over them. When cleaning the top let this covering fall down over the lower part. Clean the top by washing with soap and flannel, and rub out any spots with pumice stone. If the tops are wanted whiter, dissolve 1 oz. of oxalic acid, $\frac{1}{2}$ oz. of muriatic acid, $\frac{1}{2}$ oz. of alum, $\frac{1}{2}$ oz. of gum arabic, and $\frac{1}{2}$ oz. of spirit of lavender, in $1\frac{1}{2}$ pints of skimmed milk "turned." Apply by means of a sponge, and polish when dry, with a rubber or soft flannel.

Brown Leather may be cleaned with this last preparation.

Wash for Boot Tops.—Mix in a phial 1 drachm of chlorate of potash with 2 oz. distilled water, and, when the potash is dissolved, add 2 oz. of muriatic acid. Then shake well together in another phial, 3 oz. of strong spirits of wine, with $\frac{1}{2}$ oz. of essential oil of lemons; then unite the contents of the 2 phials, and keep the liquid thus prepared closely corked for use. This liquid should be applied with a clean sponge; then dried with a gentle heat, and polished with a soft brush. The tops will appear like new leather.

To Restore Color to Leather.—Take a small quantity of good black ink, mix it with the white of an egg, and apply with a sponge.

To Soften the Leather.—To make the leather soft and pliable castor oil is better than any other. A teaspoon of castor oil rubbed into shoes by the fire when they are new, and repeated occasionally afterwards, will add greatly to their wear.

To Ease Boots Slightly Tight at the Heel.—Rub the inside of the heel with dry soap.

To Tie a Shoestring.—First tie a single (not double) bow-knot; then using the long end of the string and the loop or bow already formed tie them into a bow-knot. A firm knot will result which will not untie of itself.

To Make Boots and Shoes Wear.—Turn the boots or shoes bottom upwards and see that the soles are dry. If new, scrape the black off the bottom of the heel. Then apply, a few hours apart, as many coats of thin varnish as will soak in. The second day after applying the last coat begin to wear the boot so that it will shape itself to the foot while moist. This will make the soles waterproof and greatly increase their wear. For the uppers, apply while warm, 4 parts of lard to 1 of resin, well mixed.

If two pairs of shoes are worn alternately, allowing 1 pair to rest while the other is worn, they will wear much longer than if 1 pair is worn continuously. Taking off the shoes worn in the street, when in the house, is both restful, and gives the shoes a chance to air and dry.

Drying Wet Boots.—Fill them with oats, instead of drying before the fire. These absorb the moisture and keep the boots in shape. Shake out the oats next day. Or, stuff them with paper to keep them in shape. Never dry wet boots or shoes quickly before the fire—it hardens them. Dry them slowly.

To Soften Wet Boots and Shoes.—Take 1 gill linseed oil, 1 oz. spirits of turpentine, $\frac{1}{2}$ oz. Burgundy pitch, and 1 oz. beeswax; melt together, and rub into the leather, when quite dry, before the fire. Good also for preserving leather from rain and sea water. Applying castor oil is also excellent; kerosene is sometimes used, but is not so good.

To Stop Squeaking.—(1) Soak the soles for a couple of hours in linseed oil. (2) Drive a couple of pegs in the middle of the soles. (3) Shake a little French chalk through a small hole made in the inner sole.

Waterproof Soles for Shoes.—Melted beeswax, thinned with sweet oil, and poured with a spoon on to the soles of shoes or boots, warmed before the fire, until no more will soak in, will make them waterproof and much more durable.

Shoe Dressing.—Take 1 oz. gum shellac, $\frac{1}{2}$ oz. borax, 1 packet slate Diamond dye, and 1 pint boiling water; cut the shellac in a little alcohol, or put it in a dish and set it over boiling water till dissolved. Moisten the dye in a little cold water, then pour over the boiling water and dissolve the borax in the same; then add this, while hot, to the dissolved shellac, and thoroughly mix them together; bottle for use while warm. A good dressing and easily made at home.

Waterproof Dressing.—Take 1 pint of drying oil, 2 oz. yellow wax, 2 oz. turpentine, $\frac{1}{2}$ oz. Burgundy pitch; melt together over a slow fire. Apply with a sponge and the boots will be waterproof, and will never shrivel.

Waterproof Blacking.—Put $\frac{1}{4}$ lb. of shellac in a large nosed bottle, and cover it with alcohol; cork it and leave for a few days until fully cut. Then add $\frac{1}{2}$ oz. of lampblack, and a heaping tablespoon of gum camphor, and let stand 3 or 4 days, stirring it occasionally until well dissolved. Apply with an old cloth to the leather.

Japan Blacking for Boots and Shoes.—Take 8 parts of treacle, 1 part of lampblack, 1 part of sweet oil, 1 part of gum arabic, 1 part of isinglass, 32 parts water, 1 oz. spirits of wine, and a little ox-gall. Mix the treacle, lampblack, sweet oil, gum and isinglass in the water; set over the fire to heat, stirring it well; add the spirits of wine and ox-gall, and bottle as soon as possible. Apply with a sponge, and warm the bottle before using.

Polish.—Take of ivory black and treacle each 4 oz., sulphuric acid 1 oz., best olive oil 2 spoonfuls, best white wine vinegar 3 cups; mix the ivory-black and treacle well in an earthen jar; then add the sulphuric acid, continuing to stir the mixture; next pour in the oil; and lastly add the vinegar, stirring it in by degrees until thoroughly incorporated. A good polish—better than many sold in stores, but it is an acid blacking.

WOODENWARE.

To Take the Woody Taste out of New Woodenware.—Scald it out first with boiling hot water, and leave it in until it gets cold; then empty it out. Next make a lye of warm water and soda (say 1 lb. soda to $\frac{1}{2}$ barrel of soft water) and to this add a little lime; wash out the article thoroughly with this mixture. Then take clear hot water and scald it out again, and finally rinse it out well with clean cold water.

To Sweeten Woodenware.—An excellent thing to sweeten woodenware is hay water; charcoal is also good.

New Woodenware.—New wooden articles should be prepared for domestic use by a thorough soaking in cold water, and scalding them afterwards. A new wooden bowl put into a large kettle of cold brine and heated to the boiling point and then allowed to cool, will be less likely to crack. It is an excellent plan to grease a new wooden bowl inside and out, before it is used at all; let it stand 1 or 2 days to soak in, and then scour well until quite clear from grease.

Washing Woodenware.—Wash utensils made of wood at once after being used, because if grease and dirt are once allowed to soak into the wood it may be impossible to restore them. Wash woodenware with lukewarm water and soap, adding a little soda; then rinse with cold water, and wipe as dry as possible. In washing a wooden bowl dry it well with a cloth, and then set it away in a cool place. Never dry it near the fire, as that cracks it.

Drying Woodenware.—In drying any woodenware, like molding-boards, chop-

ping-bowls, etc., never put them near the fire after being washed. Dry them with a cloth and then put them in a cool place, as they will crack and warp if exposed to dry heat while damp.

Pails and Tubs.—These may be kept from shrinking by saturating them with glycerine. A pailful of water put into a tub as soon as you are through using it will keep it from warping. Scald out woodenware often, say once a week for pails in active use, using boiling hot water and soda. Two or three coats of copal varnish applied to the inside of new wooden pails will keep them from water soaking, or from flavoring the water.

Wooden Spoons.—These can be kept from splitting if as soon as bought, and before being used, they are greased thoroughly with lard or butter; let it soak in well, laying them near the fire to effect it. Treat *wooden forks* the same way.

Incombustible Varnish for Wood.—Make a solution of equal parts of isinglass and alum, apply it to the wood and let dry. Fluids can be boiled over an ordinary fire in a wooden vessel thus coated.

Casks.—Before being filled these should be scalded out with boiling water, allowed to cool, and examined as to their cleanliness. If a cask smells sour, especially in summer weather, put in dry lime through the bung-hole, breaking it up into small pieces, and put in perhaps 4 lbs. to a barrel; then put in about 4 gallons of boiling water, bung it up, and leave several hours, occasionally rolling it about. Then empty it out, wash out the cask well, steam it, let it cool, and it will be fit to contain anything. Another way to treat a musty cask is to burn a little sulphur in it while empty, close the bung, and let it stand a day or so.

Casks in which the inside has been charred will preserve water, salt meat, etc., for some time.

To Clean Cider Casks.—(1) Half fill with boiling water, add $\frac{1}{4}$ lb. pearlash, bung up, turn over occasionally for two days, empty, and wash with boiling water. (2) Scald out with boiling water; if the heads are out put the cask over a fire of straw for a few minutes so as to slightly char the inside. If you have a steam boiler, partly fill the cask with water, put a steam pipe through the bung-hole into the water, turn on the steam, and so boil it.

Barrels, to Clean.—Put into the barrel a few lbs. of unslacked lime, add water and close tight; let stand awhile, then put in more water and roll the barrel; then empty it and rinse out thoroughly with clean water.

To Clean Old Vinegar Barrels.—Fill them with milk of lime and leave it in for several months; then rinse them out thoroughly with warm water, and steam the inside for $\frac{1}{2}$ hour. Old vinegar barrels become so impregnated with acetous substances that it is difficult to render them fit for storing other liquids.

FEATHERS AND HAIR.

Feathers.—*To Clean and Purify.*—Put the feathers from beds, pillows, etc., in bags, soak them $\frac{1}{2}$ hour or so in boiling hot water containing soda, then rinse them well through 2 or 3 waters, put them through a wringer; shake them up and dry in the hot sun, turning occasionally and drying them as rapidly as possible, until apparently dry, and then lay them in a warm oven on a board or paper till light and dry.

Feather pillows laid out on clean grass till thoroughly wet through during a heavy rain storm will be made fresh and light; dry in the shade, but never expose them to the direct rays of the sun.

A Hint.—Bed ticking which is so thick that the air cannot penetrate it readily should have a goose quill sewed in each corner to admit the air, and thus ventilate the feathers.

To Clean Feathers from their Own Animal Oil.—Steep them in 1 gallon of water mixed with 1 lb. of lime; stir them well, and then pour off the water, and rinse the feathers in cold spring water. To clean feathers from dirt, simply wash them in hot water with soap; rinse in hot water, and dry them.

New goose feathers which have a disagreeable odor may be freed from it by washing them in water with baking soda; then rinse them in water containing ammonia, then twice in clear water; run through the wringer, and dry.

Swansdown.—This may be cleaned by tacking strips on a piece of muslin;

then wash it well, using the best white soap and warm water. Rinse in clean cold water, and dry in the wind. Then soften the feather by carefully rubbing it between the fingers, after taking it off from the muslin. It will look like new.

To Clean White Ostrich Feathers.—Prepare a thick, warm lather of white soap; let the feathers soak in this a few minutes (have a pan long enough to let the feathers lay straight), and then draw the feathers through the fingers, using a moderate degree of pressure, and repeating until they are clean; rinse in clear warm water to take out the soap, and then in another water containing a little bluing, and a few drops of spirits of salt; then draw through the fingers to squeeze out all the water possible, shake well, and dry before a moderate fire, shaking occasionally. When dry, curl them.

For cream colored feathers wash as above, but omit the bluing and add a little coffee to the last water in which they are rinsed. Afterwards the edges may be very prettily tinted by using an old red rose leaf, moistened a little.

Darker colored feathers can be washed in the same way, but neither bluing nor coffee should be used in the rinsing water.

Grebe Feathers.—These may be washed with warm soft water and white soap, much like white ostrich feathers, but do not shake them until quite dry.

To Curl Ostrich Plumes.—(1) Heat them over a hot stove or flat-iron, and, using a bone, ivory or dull silver blade, draw the fibers of the feather between the finger and the dull edge of the blade; begin at the point of the plume, and take not more than 3 fibers at a time; curl $\frac{1}{2}$ of them the opposite way. If the stem needs bending hold it around a warm stove pipe or lamp chimney. (2) Another and easy way to curl plumes is to put sugar or salt on a hot stove, or corn cobs and salt on a pan of coals, and hold the plume in the smoke, shaking it about, and turning every part to the smoke; the more you shake the plume the better it will look; be careful not to scorch it.

Broken Feathers.—A broken feather may be repaired by sewing bonnet wire along the under side nicely, choosing silk thread that matches the color of the plume, and using a long button hole stitch.

Cleaning the Feathers on Stuffed Birds.—(1) Naturalists clean the feathers of stuffed specimens of birds by covering them over with a thin paste made of common starch and cold water. Let it dry a couple of days, and then "fillip" it off gently, beginning at the bird's head and going on regularly down to the tail, which leaves the feathers beautifully "plumed." (2) Feathers on stuffed specimens are also cleaned by putting on them a paste made of pipeclay and water, rubbing them one way only; when quite dry shake off the powder.

"Setting" Feathers.—Feathers on stuffed birds may be "set" by merely arranging them naturally with a needle, or any pointed instrument.

To Bleach Feathers.—(1) First remove the oily matter by immersing them for a short time in naphtha or benzine; then rinse them in the same a second time, and thoroughly dry them by exposure to the air. Then bleach them by exposing them to the vapor of burning sulphur, in a moist atmosphere. This process will not injure the feathers. (2) Prepare a warm soapsuds (at 175° to 185°) and soak the feathers in it a few hours; then suspend them on a thread and expose them to the direct rays of the sun, moistening them frequently.

Dying Feathers.—Feathers may be dyed beautifully by using the aniline dyes that are put up for dying Easter eggs, etc., and which can be bought at the stores. Various colors can be bought, and many shades may be produced by combinations of them, and by diluting them more or less with water. To produce grey feathers, with white spots, fasten thick paper on the places designed to be white, and spatter the balance nicely and evenly with India ink or brown aniline.

Curled Hair.—To clean this, select a pleasant day and take the hair out of the mattress carefully so as not to be choked with the dust. Pick it over thoroughly and wash it through strong soapsuds several times, doing only a little at a time. Then rinse thoroughly; wring as dry as possible, and spread it out thinly between 2 sheets of muslin. Then baste the ends, and quilt it in a few places in the middle, and hang it out to dry. Choose an empty room to do it in, because of the dust it makes,

CLOTHING AND CLOTH.

Care of Clothing.—Clothing of any kind will last very much longer when properly cared for, than it will when carelessly handled and neglected. It is surprising how heedless some people are about the care of their clothes, and how much can be saved in the clothing bill of a family by a little intelligent care.

The quantity of clothes should be considered. It is a great mistake to think that in order to dress well it is necessary to have a very large wardrobe. Too many clothes are worse than useless. They lie unused, soon go out of style, and no benefit is derived from them. To dress well at moderate expense, get what clothes you need, and no more; take good care of those you have, and when they wear out buy more. This is equally true of underclothing and outside garments. Sensible people no longer pride themselves on possessing larger stocks of any garments than they really need.

In caring for clothes, as in so many other things, it is of the first importance to have a place for everything, and to put everything in its place. This is at times a little difficult in small houses where one is crowded for room, and yet even here a little planing and management will often accomplish wonders. Any one with the spirit of order will find vastly more room than a disorderly and thoughtless person would think possible. Devise shoe bags, and the many other conveniences which the ingenious housewife can make herself and utilize so well.

Never put clothing of any kind away without first cleaning it. Look it over also, and make any little repairs that may be needed. Clothing which is put away in good condition will come out fresh and bright, but if put away dusty and dirty, the dust will take hold of it, and it will soon look seedy and ill-cared for. On taking off woolen goods, see that they are well shaken and brushed; let velvet and silk be wiped with a flannel, and let merino, serge, cashmere, and similar fabrics be thoroughly brushed. Put a clothes brush in every bed room, or provide enough so that there will be no excuse for any member of the family who neglects to use one. Silk dresses should never be brushed, but rub them with a soft piece of merino or flannel, kept for the purpose.

If caught in the rain or when clothing becomes damp for any reason, give it immediate attention. Do not carelessly hang it up, but spread it out to dry, after shaking it well. If creases appear when it is dry, iron them out, but on no account put clothing away at all damp; that speedily causes mildew. As rain and damp speedily take the freshness and beauty out of garments, it is always wise to wear one's older clothes in unpleasant weather, reserving the best garments for pleasant days; the best clothes are not expected in unpleasant weather.

Putting Away Clothing.—The manner of putting away clothes is important. All skirts, jackets, and waterproofs should have loops attached by which they can be hung. The bulging out occasioned by hanging directly on a hook spoils the appearance of a garment. If a skirt is provided with 3 bands—1 on the right side, 1 on the left, and 1 at the back to hold up the drapery (as it should be) it is much better to hang it up, than to fold it and lay it away. The best way to deal with good dresses is to hang them by their loops in large bags made of old sheets. Make these bags to button down the front so that the dresses can be put in easily. Stuff out the bows and busts with papers—royal ladies always have their dresses put away thus, it is said. This will obviate all necessity for turning a dress inside out before hanging it up—a process which makes creases, spoils trimmings, and tends to make a skirt lie flat.

When packing away silk or woolen goods which you fear may turn yellow break up a few cakes of white beeswax, fold these pieces loosely in old thin handkerchiefs, and place them among the goods. Pin the goods in old white linen sheets if you have them; if not, use cotton.

Mantles, bodices and waistcoats should be neatly folded, so as to keep them as straight as possible, and laid flat on a shelf, covered with paper or muslin, to keep them from the dust. They should never be hung up.

Cotton and muslin dresses should not be put away with the starch in them, as that tends to make them rot. Leave them rough-dried when they are not to be worn for some time.

If silk garments are laid away wrapped in paper, do not use white, as the color

of the silk may be impaired by the chloride of lime, which is used for bleaching white paper. The best paper to use is probably the yellow India paper, and next to that is brown or blue. Do not buy silk intended for dresses, long in advance of its use, as it is liable to crack or split, if kept lying in folds long, especially if it is stiffened with gum.

Ribbons.—The best way to keep ribbons is to roll them round a block and then wrap them in soft paper.

Creases.—These can usually be removed with a little effort. If a garment is hung before a fire they will often disappear. If not, dampen them a little, lay on a piece of paper or muslin, and press with a cool iron.

At the close of each season go over the articles which have been worn, and sort out and dispose of them, instead of packing them all away together. Articles which can be worn again should be brushed, repaired, and put away; those which are to be pulled to pieces, should be so treated at once, and cleaned or dyed, as the case may be. If left as they are they will deteriorate in condition and occupy valuable room. Articles of no further use to you should be given to some poor person, or sold to the rag man.

Having sorted out and cleaned the clothing, pack it away for the season. Fold it carefully so that no needless wrinkles will be formed, and pack it away in a chest or trunk. Put the heaviest articles at the bottom, and lay the others on carefully. A good way to pack them is to lay out a sheet in the trunk and lay on a newspaper; then lay in the clothing, sprinkling it well with camphor, cedar shavings, or any other moth preventive (see our article on insect pests), and then covering it with a newspaper, draw the sheet together and pin it so that the edges all overlap each other. Then shut and fasten the chest or trunk.

Men's Clothing.—This is quite as much benefited by care as that of ladies. Coats are best kept in shape by hanging them on the wire frames which are now so easily obtained, and are so cheap. When a frame is not used hang them by a loop, and not directly on the hook by the collar. Brush the coat carefully on taking it off, and before putting it away.

On taking off trousers which have been worn in wet weather, and, possibly, turned up at the bottom, shake them, pull them out lengthwise, and dry them under pressure. Keep them hung up on the wire frames, made for the purpose, like the coat frames. A trousers stretcher will take out wrinkles and creases and is a good investment. If that is not used, nor the wire frames, fold them as the tailor folds them before they are laid away. Trousers, like shoes, wear longer, and keep in shape better, if 2 pairs are kept and worn alternately. Frequent changing and stretching between times, will keep them from becoming baggy at the knees. Another good plan for hanging them up is to have a pair of suspenders for each pair of trousers and on taking off a pair to hang them by the suspenders on 2 hooks about as far apart as a man's shoulders. This keeps them in shape. Turning them inside out before hanging them up is another good plan.

Burning Clothing.—When the clothing takes fire the first impulse of the victim is to rush somewhere, but that is the worst thing to do, as it causes a draught and increases the flames. A bystander should throw the victim on the ground and then try and smother the flames by wrapping her in anything at hand, like a coat, rug, blanket or table cover. Try and keep the flames from the neck and face, and from being breathed, so wrap first at the shoulders and then work down. A lady who is alone in a house, and whose clothes take fire, should seize anything at hand and at once lie down, wrapping herself in it and rolling over. In this way the flames may be extinguished, but if she runs out into the air it will only make it worse. If the house was on fire she might run into the yard and throw herself on the ground, but should go no further.

At once throwing some flour, when it is convenient, on the clothing which is set on fire by an exploding lamp or the spilling of oil, may put out the flames and prevent a terrible accident.

Fireproof Clothing.—The following plans for rendering clothing unflammable are the results of many experiments, and are taken largely from French and German authorities. Children's clothing and muslin dresses, should be fireproofed when laundered. (1) Put 1 or 2 oz. of alum in the last water used in rinsing children's clothes. It renders them less inflammable. (2) Take 8 parts sulphate

of ammonia, $2\frac{1}{2}$ parts carbonate of ammonia, 2 parts boracic acid, $1\frac{1}{4}$ parts borax, 2 parts starch, and 100 parts water; mix, and starch the dresses with this compound. (3) Take 5 parts boracic acid, 15 parts sal ammoniac, 5 parts felspar, $1\frac{1}{2}$ parts gelatine, 50 parts starch, and 100 parts water; mix, and apply with a brush. (4) Mix 5 parts alum, 5 parts ammonium phosphate, and 100 parts water. (5) Take 3 parts borax, $2\frac{1}{2}$ parts Epsom salts, 20 parts water. (6) Use a more or less concentrated solution of sulphate of potassium and alum. (7) If fabrics are steeped in almost any saline solution, such as alum, borax, sal ammoniac, etc., they will not take fire readily, and if ignited will not burst into flames. A simple plan is to add about 1 oz. of alum to the last water used to rinse a dress, or set of bed furniture; even a less quantity added to the starch used to stiffen them will answer, and may prevent a painful accident.

Waterproofing Cloth.—(1) Dissolve, separately, equal parts of alum, soap, and isinglass, in sufficient water to make a tolerably strong solution. Then mix all together, and apply the mixture on the wrong side, thoroughly saturating the cloth; then dry it. Then brush the cloth thoroughly, first with a dry brush, and afterwards lightly with a brush dipped in a little water. (2) For woollen cloth, make 2 separate solutions; first, dissolve 1 lb. sugar of lead in 1 gallon of water; second, dissolve 1 lb. alum in 1 gallon water. Dip the cloth to be waterproofed first in the solution of lead, and, when nearly dry, dip it in the solution of alum; then dry it in the air or before the fire. This process is very effectual, and may be used for coats and other garments even after made up. (3) For linen, canvas or other cloth, brush the cloth with a solution of isinglass, and, when dry, with a solution of nutgalls; the last solution changes the gelatinous mass of isinglass into a sort of leather. (4) Spread the cloth wrong side up on any smooth surface, rub it with a piece of pure beeswax till it presents a slight but even white or grayish appearance, pass over it a hot iron, brush it while warm and the process is complete. (5) Take 3 quarts pale linseed oil, 2 oz. sugar of lead, and 8 oz. white resin; grind the sugar of lead with a little of the resin and add it to the remainder, which should be incorporated with the oil by means of gentle heat. Apply it to calico or similar material with a brush. It makes calico both waterproof and transparent, so that it may be used to cover cucumber frames, etc., instead of glass. (6) An India rubber waterproofing. Put 4 parts of spermaceti and 1 part India rubber into an earthen jar and melt them over a slow fire, but as it takes the India rubber some hours to melt it should be cut into very fine pieces; when melted, add 10 parts tallow and 5 parts copal varnish, mixing all well; apply with a stiff brush. This may be used to waterproof calico, alpaca, or any other light material, or applied to leather gaiters, boots, shoes, etc. (7) Cloth coated with linseed oil, to which a little wax and litharge have been added, will be waterproof.

To Prepare Oiled Silk.—Melt and mix well together, 1 part beeswax, 3 parts ground litharge, 15 parts boiled oil; add 3 parts of some coloring matter if desired. Stretch the silk out tight in breadths, and apply the mixture with a brush till it is well saturated; when dry, the silk will be perfectly waterproof.

Velvet.—Make up articles in velvet the reverse way of the pile, that is so the pile inclines upwards; this will prevent their looking white.

To Restore Crushed Velvet.—Crushed velvet may be restored, that is, the pile may be raised when it is crushed or flattened, by well steaming the wrong side over the spout of a boiling tea-kettle; or, cover a hot flat-iron with a wet cloth, and hold the velvet, nap outside, firmly over it, thus steaming it; then gently comb up the nap.

Cuts or faults in velvet or plush are concealed by very careful seaming on the wrong side. Insert the needle half the thickness of the material, leaving no stitches visible on the upper surface, and the sewing is drawn till the edges just meet, and no more. Be careful to work in all stray filaments, so that no fluffiness disturbs the smoothness of the pile.

Faded Plush or Aniline Dyed Articles.—When, from exposure to light, plush goods, or any articles dyed with aniline colors, become faded, if they are sponged over with chloroform their color will be fully restored. Use commercial chloroform, which is cheaper than the purified.

Marks on Plush.—These may be removed by holding the wrong side over steam, and combing up the pile.

Dress Mending.—Instead of patching a round hole in a silk or woollen dress carefully smooth the frayed parts about the tear, spread thin mucilage or the gum tragacanth paste given among our pastes, on the under side, lay on a piece of the same cloth, place on a heavy weight and let it dry. The patch can hardly be noticed.

Gloves.—*Care of Gloves.*—When taken off they should be smoothed out lengthwise and laid away flat. Keep them dry, and away from the light and air. Gloves rolled together after being taken off will soon look shabby. If gloves do not go on readily, breathe in them, or warm them gently before the fire, or lay them for 3 or 4 minutes in a damp (not wet) towel. Do not attempt to put on the thumb until the fingers are in, working them quite to the end.

To Clean Kid Gloves.—(1) White and light colored kid gloves may be cleaned by putting them on, and, filling a bowl with cornmeal, dip in the hands and rub them thoroughly with the meal, as though washing the hands; or dip a piece of flannel in the meal and thoroughly rub it on the gloves. It cleans them nicely. Undressed kid may be best cleaned in the same way. (2) Dip a piece of flannel in milk, and then rub it on good glycerine or yellow soap, and, beginning at the wrists, rub towards the tips of the fingers; first, however, lay the gloves out smoothly on a clean cloth. Leave till dry, then pull gently in all directions till soft. If the gloves have been made too wet, they must be fitted on the hands again when half dry. (3) Put the gloves on, and wash the hands in gasoline or benzine. This cleans kid well, especially white, but fades some colors. The unpleasant odor soon evaporates. (4) Rubbing with stale bread crumbs cleans gloves sufficiently sometimes.

To Renovate Black Kid.—Mix a little good black ink with a little sweet or salad oil; apply it with a sponge or flannel, and dry in the sun.

Dying Gloves.—Light colored kid gloves may be dyed black as follows: Take a bowl, put in $\frac{1}{2}$ cup of logwood chips, cover them with alcohol, and let stand 24 or 48 hours. Then put on the gloves, take a piece of flannel and dip it in the solution, and rub it on the gloves over every part; let it dry, and repeat the operation. *To dye yellow.* A simple decoction of onion peel is said to produce upon glove leather an orange yellow superior to any other. *Aniline* colors can be employed without any previous preparation of the leather. *The bluish tint* so much liked in black gloves, is obtained by washing the finished article with a solution of sal ammoniac. White gloves may be given a pretty shade, by dipping them in strong coffee.

Buckskin Gloves.—*To clean:* (1) Wash 3 times in clean (not hot) soap lather. Put in a little blue, wring them well, and put them in as good form as you can; when nearly dry, but sufficiently damp to form to the hand, put them on (if difficult to get them on dampen a little); then press or push them off, dry, away from the fire, and they will be as good as new. (2) Take $\frac{1}{4}$ lb. Paris white, $\frac{1}{4}$ lb. scraped pipeclay, and 3 oz. best isinglass; boil all together, stirring while boiling. Lay this compound on thick; when dry, beat it out by clapping the hands well together, brushing, etc. Then carefully iron the gloves with a hot smoothing iron.

Washleather Gloves.—Take out grease spots by rubbing with magnesia or cream of tartar. To wash (1) make a strong lather with curd soap and warm water; lay the glove flat on a board or other unyielding surface; dip a piece of flannel in the soap lather, and rub the glove thoroughly, in every part, till all the dirt is out; then rinse, first in warm water and then in cold. Dry in the sun or before a moderate fire. (2) Put the gloves on the hands and wash them with soap and lukewarm water. When quite clean, pull them off carefully, and lay them in the sun to dry; put them on before they are quite dry, and stretch them to keep them from getting hard.

Suede, Buckskin or Chamois Gloves are sometimes cleaned by rubbing them with stale bread crumbs. Or mix powdered alum and fuller's earth, dip a stiff brush in the mixture and rub the gloves with it.

Cloth Gloves.—To clean these, pour in a bowl a little of the cleaning compound No. 3, given elsewhere, and wash the gloves in it; when nearly cleaned rinse them in a clean lot of the same solution; if very dirty rinse again; then rub with a soft flannel cloth to smooth out the wrinkles, and dry them.

Gloves of all kinds are better and more shapely if put on wooden hands or glove trees to dry, when wet by washing them.

Bonnets and Hats.—*To Clean Straw Bonnets.*—They may be washed with soap and water, then rinsed in clean water, and dried in the air. Afterwards wash them over with white of egg, well beaten. The wires must be removed before washing. (2) Wash white straw hats with citric acid solution, as directed for men's white straw hats (which see). (3) Black hats can be washed with clear strong coffee; then apply 3 coats of good liquid shoe polish or blacking, letting each coat dry before applying the next. The hat will look like new.

To Dye Straw Bonnets.—*For black:* boil 2 lbs. logwood and $\frac{1}{2}$ lb. fustic together for 4 hours; remove all wires, and boil the bonnets in this first; then add $\frac{1}{4}$ lb. green copperas, and reboil the articles 1 hour longer; expose them to the air for 10 minutes, then place them in the liquid again for 1 hour; then dry and brush. This will suffice for 12 bonnets. *For brown:* take $\frac{1}{2}$ lb. fustic chips, $\frac{1}{4}$ lb. of peachwood, $\frac{1}{2}$ oz. of madder; boil these for 4 hours; add $\frac{1}{2}$ lb. of green copperas; boil for 2 hours; dry and brush. *For gray:* boil $\frac{3}{4}$ oz. of cud-bear for 3 hours; add 2 oz. blue paste; mix with as much water as will cover the bonnets; let them remain in soak 10 clear days; rinse and dry, and they are ready for blocking. This is sufficient for 6 bonnets. *For red:* prepare a potash lye, and boil in it some ground Brazilwood, making it strong or weak to suit; then put in the straw goods, and boil them.

Size for Colored Straw Bonnets.—Break up 1 lb. best glue, put into a vessel with 4 quarts cold water, and let soak for not less than 12 hours. Then pour it, water and all, into a sauce-pan, and put it over the fire to dissolve; keep it well stirred, and be careful not to let it boil. When it is all well melted strain it into an earthenware pan, and use it while scalding hot. The bonnets as they are taken out of this size must be sponged as dry as possible, the shape regulated, and then hung up to dry. This quantity is sufficient for 12 bonnets.

Parchment Size for Straw Bonnets, Silks, Etc.—Well wash 1 lb. of parchment shavings or cuttings, in 2 or more lots of cold water; then put them into a sauce-pan, or other vessel, with 4 quarts of cold water, and let them simmer gently until the quantity is reduced to 2 quarts. Strain through a fine sieve and it is ready for use. One teacup of this is sufficient to stiffen 1 bonnet, or to mix with 1 quart of water for finishing silks.

To Bleach Chip and Straw Goods.—First clean, by washing in warm soap liquor; brush them well, both inside and out, then rinse them well in cold water, and they are ready for bleaching. *To Bleach.*—(1) Put a small quantity of oxalic acid into a clean pan, and pour on it sufficient scalding water to cover the bonnet or hat. Put the article into this liquor, and let it remain in it for about 5 minutes; keep it covered by holding it down with a clean stick. Dry in the sun or before a clear fire. (2) Having first dried the bonnet or hat put it, together with a saucer of burning sulphur, into a box with a tight closing lid. Cover it over to keep in the fumes, and let it remain a few hours. The disadvantage of bleaching with sulphur is that articles so bleached soon become yellow; when bleached by oxalic acid they do not. *To Finish or Stiffen.*—After cleaning and bleaching, white bonnets should be stiffened with parchment size. Black or colored bonnets are stiffened with a size made from the best glue.

Straw or chip platts, or Leghorn hats and bonnets may also be cleaned and bleached, and finished as above.

Black Varnish for Chip and Straw Goods.—A good black varnish is easily prepared for chip and straw goods which gives them a fine gloss. Crush 2 oz. good black sealing-wax, and put it in a bottle; add 8 oz. 95° alcohol. Cork and set in a warm place, shaking it from time to time until the sealing-wax is cut. When it is applied have both the article and varnish warm.

Felt Hats.—Wash them with a hot solution of soda, or sesquicarbonate of ammonia. Then, if white, cover the hat with a paste made of pipeclay and water, tempered with white precipitated chalk. When dry, rub and brush off. See also the cleaning compound No. 3, given elsewhere, for a good article to use. Grease and paint stains can be removed with turpentine; if the turpentine leaves a mark, rub with alcohol or benzine.

To Make Felt Hats Waterproof.—Remove the lining, and paint the inside of the hat with Canada balsam, made hot. Hats made waterproof and not ventilated will bring on premature baldness, so punch a few small holes in the side.

Men's White Straw Hats.—These may be readily cleaned by (1) using a nail

brush and brushing them over quickly with soap and water; then press them into shape and they will be stiff when dry. (2) Sponge them with a solution of 1 part citric acid to 20 parts water (some people rub them with a lemon cut in two); then rinse thoroughly with clean water and dry in the sun, and they will be beautifully bleached. Stiffen, if needed, with gum water.

Black straw hats in being cleaned should be dusted and brushed; they may then be rubbed all over with a mixture of good black ink and liquid glue.

To Renovate Hat Bands.—Take 8 oz. alcohol and dissolve in it 2 oz. aqua ammonia, 2 oz. sulphuric ether, and 3 oz. white castile soap; rub this on briskly with a tooth brush or cloth, and then rinse off with soft water, and dry.

A Wet Silk Hat.—Shake off the surplus water, and, with an old soft silk handkerchief, rub it gently the way of the nap; then hang it up in a warm room, away from the fire, to dry. When dry, brush it with a soft brush, and with a moderately hot flat-iron smooth it around the way of the nap.

Bulges or indentations in a silk hat may be removed by warming it (by steam is preferable) and pressing them out with a hot iron; attempts to restore the shape by other means will probably result in cracking the hat.

Label children's hats plainly with the name and place of residence of the wearer; then if the child is lost it can be readily returned to its home.

Umbrellas.—Wet umbrellas should be placed handle downward to dry. In that way they dry uniformly. If stood handle upwards the water will gather at the lowest point and the lining will hold the moisture and cause the silk to rot. Do not leave them open to dry; the tense condition stiffens the silk and it cracks sooner. If tightly rolled and put in umbrella cases, the friction of the case wears many tiny holes. Many an umbrella is ruined by being wedged into a crowded umbrella stand. Keep your umbrella in your own room, out of the case, and stood handle down; thus you will get the most possible wear out of it. *To clean ivory and metal handles* see our articles on "Ivory" and "Metals."

Parasols.—To renovate them, sponge with warm soap and water, and iron them, while damp, on the inside, with a smoothing iron. If the silk is very dirty it will be better to sponge it with gin, or spirits of wine; in this case, iron on the right side, first spreading on thin paper to prevent glazing.

Fur.—To Clean.—(1) Soap and water will spoil fur. Get some clean common whiting (powdered, and plenty of it) and put it in a damp place for a day or so, but on no account let it get wet; rub it into the fur with the hand, and don't be afraid to rub it; then leave it till next day, and give it another good rubbing; then shake out all the whiting you can, and give it a good brushing with a clothes brush. It will now be quite clean, except the skin at the bottom of the fur. To remove the dirt from thence, get the fur over the back of a chair, and brush very briskly with the point of the clothes brush, giving a puff of wind with every stroke of the brush. With a little patience every trace of whiting, grease and dirt can be removed. Lastly, pour a little spirits of wine on a plate, dip the point of the clothes brush in this, and pass it lightly over the fur, moving the brush the way the fur lies. (2) Take equal parts of flour and powdered salt (which should be well heated in an oven) and thoroughly rub the fur. It should afterwards be well shaken, to free it from the flour and salt. (3) Lay the fur on a table, and rub it well with bran, made moist with warm water. Rub until quite dry, and afterwards with dry bran. The moist bran should be put on with flannel, and the dry with a piece of book muslin. (4) Rub light-colored furs in addition, with magnesia after the bran process. Dry flour may be used instead of the wet bran. Rub the wrong way of the fur to clean; then smooth the right way.

Ermine may be renewed and cleaned by rubbing it from time to time as it becomes soiled, with cornmeal. It is also cleaned sometimes by rubbing in dry powdered starch.

Sealskins.—If a sealskin has been unfortunately wet, do not attempt to rub off the moisture with the hand nor with soft cloths or anything else, and do not put it in a warm room to dry—that will flatten it. Merely spread it out in a cold room until it is dry, before attempting anything else. Beat the fur thoroughly, and be sure it is perfectly clean before it is put away for the summer. *Campbor* should not be placed near sealskin, as it causes grey streaks to appear in it.

In putting any furs away for the summer they should be perfectly clean—that is of the first importance. Brush them, shake them, beat the firmersorts with a cane, air them, and wrap them first in linen bags, and afterwards in brown paper bags, pasting up all openings carefully. Newspaper is not strong enough for the outside wrapper, but may be used inside. Put with them either a little camphor, cedarwood or cloves, or best of all, dust them over freely with good fresh insect powder. (Never put camphor near sealskin.) Chinchilla is too perishable to be shaken. Furs may be put in paper boxes, but the cracks should be tightly pasted over with paper. Any article of fur previously attacked by moths, should be carefully examined in July, to see that none are present, notwithstanding the other precautions.

To Restore Crushed Fur.—Furs, after having been put away for the summer, sometimes look rough and crushed. To correct this, take a hair brush, wet it, and brush the fur the wrong way; then dry for about 30 minutes, after which beat it well with a light cane, on the right side; then use a coarse comb and carefully comb down the fur the right way.

To Dye Fur.—*For blue*, take 1 part blue vitriol, 7 parts logwood, 22 parts water; mix and boil. *For brown*, use logwood (the tincture only). *For purple*, use 6 parts alum, 11 parts logwood, 29 parts water. *For red*, the ingredients are, 1 oz. cochineal, 1 lb. ground Brazilwood, and 3 quarts water; the mode is to first put the Brazilwood in the water and boil an hour; after which strain, and put in the cochineal, and boil again $\frac{1}{4}$ hour.

To Clean the Fur on Stuffed Animals.—First, give the animal a good brushing with a stiff clothes brush. After this, warm a quantity of new bran in a pan, taking care it does not burn, to prevent which keep stirring it. When warm, rub it well into the fur with your hand. Repeat this a few times, then rid the fur of the bran, and brush it sharply until free from dust.

TO REMOVE SPOTS AND STAINS.

One of the common perplexities of the housekeeper is to remove spots and stains from different articles. The great difficulty often is to remove the stain without injuring the delicate tints of the fabric. Stains may be divided into 3 classes. (1) Simple stains, produced by 1 substance, and which may be removed by 1 agent. (2) Mixed stains, produced by 2 or more substances conjointly, and requiring the application of several cleaning agents. (3) Stains produced by substances which alter or destroy the color. Following we give a synopsis of the best plans in use for removing stains; arranged for convenient reference.

In rubbing fabrics to remove stains be careful to always rub the way of the stuff, and not indifferently backwards and forwards.

If colors have been changed by vegetable or dilute mineral acids, they can usually be restored with dilute ammonia. If that is not sufficient the spot must be wet with a mordant and the requisite dye painted in, in which case the spot must be continuously rubbed with a pledgit of wool, so as to spread it equally and leave no sharp line of demarkation.

See what we say about applying benzine, etc., under "Grease" (4th method).

Before attempting to remove a stain from colored goods, experiment on some unseen part and see if the article you expect to use affects its color.

Injured Colors.—Colors (except some shades of red) which have been destroyed by acids, can usually be restored by first applying ammonia to neutralize the acid, and then apply chloroform which will restore the color. Colors injured by alkalies, should be treated first with dilute acid to neutralize the alkali, and then with chloroform.

Any color damaged by ammonia, used to neutralize acids, can be restored by applying chloroform.

Articles dyed with aniline colors, when faded by exposure to light, may be restored by sponging them over with chloroform. Commercial chloroform which is cheaper than the purified, can be used.

We explain below the properties of some of the more common and useful cleaning agents.

ALCOHOL.—This is always obtained from the fermentation of sugar, starch, or other

saccharine matter. It readily dissolves fats (although less readily than benzine or ether) resins, iodine, salts, alkaloids, etc., making it a useful cleaning agent.

AMMONIA.—This is a transparent, pungent gas, formed of nitrogen and hydrogen. Water will take up 750 times its bulk of this gas, forming aqua ammonia or hartshorn. It has so many domestic uses that a bottle should be kept in every family. It is especially valuable for removing grease spots from clothing, etc. It is one of the best antidotes for mineral poisons. When the stronger kinds are used for cleaning, etc., care should be taken not to breathe it too freely, lest it injure the delicate lining of the nose and lungs. It is an alkali, and will neutralize acid stains. Before applying it to any colored article, try it first on some unseen part to see if it affects the color.

BENZINE.—This is also called *benzole* and *phene*. It is known in chemistry as hydride of phenyl. It is a hydrocarbon, obtained from coal-oil. It is sold under the name of "*benzine collas*" for 3 or 4 times its real value. It has many domestic uses, being an excellent solvent for India rubber, wax, camphor, fats and oils. It is extremely volatile, and should on no account be used by lamplight, or near a fire. Keep it tightly corked at all times. As a cleaning agent for grease spots, etc., it hardly has an equal; but it does not remove sweat stains, nor stains from alkali, acids, sugar, milk, etc. It does not injure the most delicate fabric.

CHLORIDE OF LIME.—This is extensively used for bleaching textile fabrics, and for removing fruit and red wine stains. Its action on the fabric may be checked by immersing it in aqua ammonia or in a solution of hyposulphite of sodium.

CHLOROFORM.—This is a colorless liquid which evaporates readily, but it is not inflammable like ether and benzine. It readily dissolves fats, fatty oils, resin, wax, India rubber, etc., making it a valuable cleaning agent, but great care should be taken not to inhale its fumes on account of their well-known stupefying effect.

CITRIC ACID.—This will remove blue or crimson spots on scarlet, and it revives certain colors, like yellows and greens; it also neutralizes alkalies. *Acetic* or *tartaric acids* are cheaper, and can always be used in its place for all cleaning purposes, which our readers will do well to remember.

ETHER.—This is prepared from a mixture of alcohol and sulphuric acid or vitriol. It is colorless and very volatile, and its vapor mixed with a large amount of air is very explosive so that it should *never* be used near a light or flame. It readily dissolves fats, resins, wax, balsams and bitumen, making it a useful cleaning agent. Great pains should be taken not to inhale its fumes.

GLYCERINE.—This is a colorless, viscid fluid, of a sweetish taste. It is soluble in water or alcohol, but not in ether, benzine or chloroform. It is a solvent for alkalies, alkaloids, dye-stuffs, etc.

HYDROCHLORIC ACID.—This is also called *muratic acid* and *spirit of salt*. It is composed simply of chlorine and hydrogen. It is a powerful acid, but is one of the most useful acids known, enormous quantities being used in the arts. It should be kept in a bottle with a ground glass stopper, plainly labeled, kept from children, and used with care, but it has many domestic uses, such as removing stains from furniture, glass and other ware, clothing, etc. It is alluded to many times in our pages.

OXALIC ACID.—This is one of the vegetable acids. It much resembles Epsom salts, and is sometimes mistaken for it. It is an *active poison*, and should be kept in a glass bottle, clearly labeled and carefully guarded. It is used to remove spots of ink and iron, the stains of urine, fruit, astringent juices, etc. It is best used on light goods, as it attacks light and fugitive colors. It should be diluted in cold or lukewarm water, as it attacks the texture of the cloth if undiluted.

OX-GALL.—This is best to purify this before using it. Mix it with an equal amount (by weight) of alcohol; let stand a few days, shaking it occasionally, then filter, and evaporate it down to the consistency of syrup. It readily dissolves fats, and cleans woollens better than soap. It should be used cautiously, as it gives light and delicate colors a green or greenish yellow tint if used too strong. For cleaning silk, etc., it is often mixed with yolk of egg, fuller's earth, honey, turpentine, alcohol, etc.

SALTS OF SORREL (often improperly called *salts of lemon*).—This is really binoxalate of potassium, and is formed by combining oxalic acid and potassium carbonate. It is used to remove ink stains.

SPIRITS OF WINE is the same as alcohol, but it contains more water.

TURPENTINE.—This is distilled from the sap or juice of the pine or fir tree. It readily dissolves fats and resins, but is not equal to benzine for general cleaning. The idea that it increases the luster and softness of silk fabrics is a mistake.

YOLK OF EGG.—This if kept too long loses its value as a cleaning agent. Its cleansing properties are similar to those of ox-gall. Sometimes it is mixed with the oil of turpentine for use.

Acid Stains.—Most acids produce red stains on blacks, blues and violets, made from vegetable colors (except indigo). The best treatment for *all* acids is to *at once* apply some strong alkali, like ammonia, soda, or potash—(ammonia is best). Afterwards wash with water. Red stains can thus be removed. If the acid was very strong, the fabric will probably be destroyed, as well as stained. Then there is no remedy. The brown stains of nitric acid are nearly hopeless. Repeated moistening with a very strong solution of potash permanganate (or as a weak substitute use Condey's fluid), followed by rinsing with water, is the best thing. A color injured by an acid, which is not restored by the ammonia (or other alkali) used, can frequently be restored by using chloroform afterwards.

Alkaline Stains.—(1) For white goods wash merely. For colored woollens, cottons, silk or satin, moisten the stain first, and then cautiously apply dilute acetic acid with the finger-end; when the stain disappears wash well in clean water.

(2) If delicate colors are injured by soapy or alkaline matters, renew the dye by applying colorless vinegar of moderate strength.

Albumen.—Merely wash the article in clear water to remove it.

Alizarine Ink.—On linen, use a solution of tartaric acid; the older the stain the stronger the solution must be. On cotton, woolen, or silk, use dilute tartaric acid, if the colors will bear it, but use great care on silk.

Aniline Stains.—For aniline inks or other aniline stains (1) wash with alcohol containing some acetic acid; if, however, the colors of the fabric will not stand acetic acid, use alcohol alone. (2) Try a solution of sodium sulphite. (3) Same as "Alizarine Ink" (which see).

Beer.—Wash in soapy, and then in clear, water.

Blood.—(1) Merely wash with clean water. (2) Make a thick paste of cold water and starch and apply it to any article you do not wish to wash, and place in the sun for 2 hours; brush off, and if any trace remains, repeat.

Coffee and Chocolate.—(1) Apply a mixture of glycerine and yolk of egg; then wash out with warm water, and while still damp iron on the reverse side with a moderately hot iron. (2) Wash them in very hot water, soap carefully, and then expose to sulphur fumes. (3) On woolen goods, mix 1 oz. glycerine, 9 oz. water, $\frac{1}{2}$ oz. aqua ammonia; apply repeatedly, press between a cloth, and rub with a clean rag. Steam a little if needed, and the stain will be gone. (4) Delicate colored silks are more difficult. Mix 5 parts of glycerine, 5 parts of water, and $\frac{1}{4}$ part of ammonia. Apply it, to test it, on some unnoticeable place; if, after drying, it affects the color, leave out the ammonia; if not apply to the stain with a brush, leave on over night, and then rub with a clean cloth; then remove the dry substance with a knife, brush over with clean water, and press between cloths, and dry. Now, if needed, rub with dry bread. Restore the finish with a thin solution of gum arabic.

Dust.—Beating and brushing merely, will remove these stains from white and colored cotton goods. For old dry stains on colored silk and woolen goods, apply alcohol mixed with yolk of egg, let dry, and scrape off; wipe away remaining traces of the egg with a linen rag dipped in warm water.

Fruit.—(1) Most spots may be removed without leaving a stain by rinsing in cold water containing a little ammonia, before the spot has dried. (2) For colored cottons or woolens, wash with tepid soapsuds or ammonia. Silks the same, with gentle rubbing. For linen (table cloths, etc.) or white cotton, use warm chlorine water, or submit to the fumes of burning sulphur (strike a match and hold it so that its sulphurous vapors will be diffused over the stain—using 2 or more if necessary). After washing, the stain will vanish. (3) Spread the stained fabric on the ground in the open air; smear the spot with soap, and sprinkle on common salt; wet, and as it dries, re-wet. Wash after 2 or 3 hours exposure, and the stain will usually be gone. (4) Rub the spot on each side with hard soap; then lay on a thick mixture of starch and cold water, and rub it well into the spot; afterwards expose to the sun and air; after 3 or 4 days repeat if necessary. (5) Apply salts of sorrel, or a solution of soda hypochlorite; wash it out carefully when the object is attained, the latter particularly. (6) Wash fresh stains in kerosene as you would in water.

For sour and acid fruits, see vinegar.

Grass.—(1) Rub on molasses thoroughly; then wash with clean water. Repeat if necessary. (2) For white goods wash in boiling water. For colored goods, whether cotton, woolen, silk, or satin, damp with a solution of tin chloride; then wash out at once with an abundance of clear water. (3) For light dresses wet the stained part with alcohol; rub well, and the green will be removed.

Gravy.—For these stains on delicate silks, first use soap and water to take out the salts and vegetable matter; then turpentine or benzine to take out the grease and oil. After taking out a stain the gloss may be restored to silk by sponging it with gum water, made by either gum arabic or gum tragacanth; stretch out the cloth smoothly to dry.

Grease.—(1) For linen, use soapsuds or alkaline lyes. For cotton, use luke-warm soapsuds. For woolen use soapsuds or ammonia. For silks, use benzine, ether, ammonia, chalk, magnesia, or yolk of egg with water. (2) For very delicate fabrics, ether or chloroform will take out grease, but the more lightly and briskly

they are applied the less danger of injury to the goods; as both quickly evaporate it is needless to use water afterwards. (3) In applying chalk, magnesia, etc., to a delicate silk do not wet them; apply them dry to the spot, rub them lightly with the finger, and after a time brush off. On other goods they can be applied as a wet paste, and rubbed off when dry. (4) In using turpentine, benzine, etc., people generally make the mistake of wetting the cloth with the benzine, etc., and then rubbing it with a sponge or cloth. This dissolves the grease, but spreads it over a greater space without removing it. The best way is to place a piece of blotting paper underneath, then saturate the cloth with the benzine or whatever is used, then lay another piece of blotting paper on top and press it. The grease will be dissolved, absorbed by the paper, and entirely removed. A very old or thickly crusted spot, may often advantageously be softened by a warm flat-iron, shielded by a thick paper, before applying the turpentine or other solvent. (5) Spread down blotting paper or chalk, lay on the goods, cover with the same, and apply a hot iron—not hot enough to scorch, however.

For wagon grease: On linen use soap or turpentine, alternating with a stream of water. On cotton or woollens, rub with lard or butter, then soap well; wait a little and wash alternately with turpentine and water. On silk, same as for cotton, but use benzine instead of turpentine, and let the water fall on it from some height.

Machine grease or oil: This generally contains, besides the grease, oxide of iron worn off the machinery, etc.; therefore, first remove the grease with benzine, turpentine, or ammonia; then treat the spot with oxalic acid, chloride of lime, or, on delicate materials, with lemon juice, to take out the iron. After using these agents always rinse the fabric well with water.

Gelatine and Glue.—(1) Merely wash in clean water. (2) For glue, moisten in steam, immerse in hot water, and rub.

Green Nut Shells or Tannin.—On linen, use warm chlorine water, javelle water, or concentrated solution of tartaric acid. On cotton, woolen, or silk, wash several times alternately with water and chlorine water, diluted more or less according to the colors. Use care on silk.

Gum.—Cut it with alcohol or benzine; or treat it like wax (which see).

Ink.—For black or nut-gall ink: (1) Put *at once* into milk; while there, rub gently for a few minutes. If allowed to dry, ink is more difficult to remove, but can be with a little effort, but use hot milk. (2) Soak the spot with ripe tomato, rub a little, and then wash. The stain does not entirely disappear until after the washing. (3) Pour on kerosene oil and rub with the hand; repeat the operation if necessary. (4) Apply pure melted tallow and leave 1 or 2 days; then wash out the tallow and the ink will come with it. (5) On cotton, woolen, or silk, saturate with turpentine, leave on several hours, and rub between the hands; the ink will crumble away. On linen, use tartaric acid. (6) Stretch the article over a warm flat-iron, and squeeze on a few drops of lemon juice. (7) Moisten it with strong salt water, and then sponge with lemon juice. (8) Treat old ink-stains first with proto-chloride of tin, to deoxidize the iron, and then with dilute oxalic acid. On white goods, touch the part stained with a dilute solution of chloride of lime; then wash thoroughly. (9) On white goods, use warm oxalic acid or dilute muriatic acid with little pieces of tin. On fast-dyed woollens and cottons apply citric acid carefully and repeatedly. On silks, efforts are well nigh useless. (10) Delicate colors will be injured by oxalic acid or similar articles. For these, carefully apply a weak solution of pyrophosphate of soda, using a small brush; repeat several times, and the ink will be removed without injuring the article. Then rinse out with clear water.

Remove any ink spot before washing the article, or the soap will "set" the stain and make it very difficult of removal.

Aniline inks: Treat the same as "Aniline Stains" (which see).

Indelible or Marking Inks: (1) Mix 1 part cyanide of potassium in 4 parts water; soak the spot in this a few hours and it will fade out. (Highly poisonous, so handle carefully.) (2) Steep about $\frac{1}{2}$ hour in chlorine water; then wash with ammonia; then with clear water. (3) First soak in strong salt water; then wash with ammonia. (4) With a small brush (camel's hair) apply a saturated solution of cyanuret of potassium; then wash in clean cold water. (5) To a solution of strong cyanide of potassium add a few grains of iodine. Repeated applications will remove any stain caused by nitrate of silver.

Prinker's Ink: Put the stained parts of the fabric into a quantity of benzine; then use a fine, rather stiff brush, with fresh benzine; dry, and wash clean with warm water and curd soap. The benzine will not injure the fabric or dye.

Red Ink: (1) Same as number 2 given for "Fruit" (which see). (2) Moisten the spot with strong alcohol acidulated with nitric acid.

Iron-Mold and Rust.—(1) Wet the spot with lemon juice, sprinkle on salt, and hold over the spout of a boiling tea-kettle, or expose to the sun. (2) On linen dip the spot in sour buttermilk and dry in the sun; repeat several times if necessary. (3) Wet the spot, place the linen over a pan of hot water, and put a little salts of lemon on the spot as soon as the stain disappears, wash it in clean water. (4) Wet the spot and lay on powdered oxalic acid or cream of tartar; rub in well, and then wash off with clean water. The cream of tartar is effective only on stains of recent date. (5) Same as number 9 given for "Ink Stains" (which see). (6) On silk or satin goods moisten with strong vinegar, leave covered for some time with beechwood ashes, and finally wash in strong soapy water. (7) Wash the soiled spot in kerosene as you would in water; apply before using soap, or it is useless.

Lime and Lye.—Same as "Alkalies" (which see).

Lubricating Oils.—See "Machine Grease."

Mildew.—(1) Soak the spots in sour milk or buttermilk, and then expose to the hot sun; then rinse in clear water. (2) Moisten both sides with lemon juice, cover with a paste of soft soap and chalk, and sun for $\frac{1}{2}$ hour; repeat till gone. (3) Dilute hartshorn will take mildew from woolen goods. (4) On cotton or linen first wet with soapsuds; then mix equal quantities of soft soap and chalk, and apply it; then spread it out on a tin dish, and expose all day to the hot sun; repeat if necessary. (5) Dip the spot into a weak solution of chloride of lime, and expose to the sun a few minutes; repeat till it disappears, and then rinse thoroughly in clean water. On almost any fabric chloride of lime will remove mildew, but as this turns most colors it must be used with care. (6) Mix soft soap with powdered starch, add half as much salt, and the juice of a lemon; apply it to both sides of the cloth and expose to the hot sun.

Mercurial Ointment.—This produces very persistent stains. To extract them, wash the spot with a hot solution of soda (1 part soda to 50 of water), and when the grease is removed rub over with a rather strong solution of clear chloride of lime. If the article is colored or delicate, benzine must be used instead of the soda solution. Apply to both sides of the material.

Milk.—For white goods, wash thoroughly in soapy or lye water. For colored cottons or woolens, use benzine or turpentine; wash afterwards in soapy water if needed. For silks or satins, use the purest benzine. See number 4 for "Grease."

Molasses.—Same as "Sugar" (which see).

Mud.—(1) In many cases the best treatment is to let the mud dry without brushing; when fully dry brush off. (2) For mud stains, first remove the vegetable matter with soap and water; then use cream of tartar to remove the iron often present in mud; then wash with clean water. (3) Oxalic acid is often used to remove traces of mud which do not yield to other agents.

Rust.—Same as "Vinegar" (which see).

Nitrate of Silver.—(1) Apply chloride of copper; then touch with a crystal of hyposulphite of soda; then wash with water. This can be applied to colored woven cotton tissue. For white cottons and linens, use *dilute* solutions of permanganate of potash and hydrochloric acid, followed by the hyposulphite of soda and clear water. (2) Moisten the spot with a solution of bichloride of mercury. (3) Moisten repeatedly with a weak solution of cyanide of potassium, and rinse thoroughly in clear water.

Oil.—Same as "Grease" (which see).

Paint.—(1) For new stains, saturate as often as necessary with equal parts of turpentine and ammonia; when quite softened, wash out with soap and water. (2) For old, dry stains, apply olive oil or butter; when softened use chloroform; or, instead of the chloroform, use turpentine first, and then benzine. (3) Patient, continuous rubbing with chloroform, will remove paint from black silk or other material. (4) For silks or satins, spread on a thin paste of ether and carbonate of magnesia; after the ether evaporates, brush away the magnesia, or rub with

crumbs of bread. (5) Use turpentine to remove the oil, and oxygenated water to oxydize the lead, and finish with dilute acetic acid; if the paint contains oxide of iron, oxalic acid can be used, while copper colors must be treated with ammonia.

Peach Stains.—These may be removed from a table cloth by holding it over a basin and pouring hot water through. See also "Fruit."

Perspiration.—(1) Apply first weak ammonia; then bichloride of tin. If the color is not altogether destroyed this will restore it. If the color is permanently affected the only remedy is to apply the appropriate mordant, and then paint on the requisite color. (2) Apply a solution of hyposulphite of soda, and then bleach if the goods are white.

Pitch.—See "Tar."

Punch Stains.—Wash in soapy, and then in clean water.

Scorches.—Apply soapsuds and let them lie in the sun. If that fails, put 1 lb. white soap in 1 gallon milk, and boil the articles in it. See also "The Laundry."

Sauce.—Apply benzine or turpentine to remove the grease or oil; then ammonia to neutralize the juice or vinegar in the gravy; finally clean water to take out the blood, etc.

Sealing Wax.—(1) Warm and apply strong methylated spirits. (2) Use strong alcohol.

Soup.—Same as "Milk" (which see).

Stearine or Spermaceti.—Use strong 95° alcohol to cut it, on any kind of goods.

Sugar.—Wash in clean warm water.

Tannin or Tanning Juices.—See "Green Nut Shells."

Tar and Pitch.—(1) Rub well with clean lard; then wash with warm water and soap. (2) Apply olive oil; then benzine or turpentine. (3) Use strong alcohol. (4) On silk or satin, rub with clean lard; then soap well, and leave it on some time; then wash alternately with benzine, and water falling on the under side from some height. Treat carefully. (5) Mix turpentine and yolk of egg and apply; when dry, scratch it away, and wash thoroughly in hot water. (6) For silk or satin, moisten and then rub with ether or chloroform; then lay on chalk or pipeclay; then blotting paper, and pass a hot iron over it.

Tea Stains.—(1) Place a bowl under the fabric and pour clear boiling water through the stain. (2) Apply equal parts of ammonia and alcohol; then wash in tepid soapsuds.

Urine.—(1) Wash out with alcohol or dilute citric or acetic acid. (2) Same as number 1 given for "Perspiration" (which see).

Varnish or Resin.—(1) Warm, and apply strong methylated spirits. (2) Use chloroform, but with care. (3) Use turpentine or benzine, and then soapsuds. For silk, use benzine or ether, and then soap, but with care.

Vegetable Dyes.—Same as number 2 given for "Fruits" (which see).

Vinegar and Acid Fruits.—(1) For white goods, wash in clean water to which ammonia has been added; or, if a fruit stain accompanies the acid, wash with water, and follow with chlorine water. (2) For colored cotton, woolen, silk or satin, moisten carefully with dilute ammonia; then wash in clean water. (3) Apply a thin paste made of prepared chalk and water; this will be preferable for delicate colors.

Walnut Stains.—Same as "Green Nut Shells" (which see).

Water.—If water falls on some kinds of silks, satin, or woolen fabrics, it dissolves away a part of the dressing, causing a dull spot on the glossy ground; to remedy this, steam the material till it is all equally moistened; it may then be hot-pressed, or if small, ironed with a hot, but perfectly clean iron.

Wax.—Remove what you can with a knife; place a wet linen beneath, cover the stain with several layers of blotting paper; and pass a hot iron over; the heat melts the wax, and the paper absorbs it. Remove any remaining trace with benzine.

Whitewash Stains.—Wash at once in vinegar; that will usually restore them.

Wine.—(1) Dip the stained part into boiling milk; keep the milk boiling until the stain disappears. (2) For port and claret stains, apply a little salt, and then moisten with sherry. (3) Soap the stain; then burn sulphur under the

large end of a paper funnel, and direct the small end to the spot on the cloth. (4) For sour wine, same as "Vinegar" (which see). (5) On white goods, rinse with water, apply a weak solution of chloride of lime, and rinse again freely. Restore the dressing by steaming, starching, and pressing.

Red Wine Stains: Same as number 2 given for "Fruit" (which see).

Cleaning Compounds.—No. 1.—Take $\frac{1}{4}$ oz. oil of sassafras, $\frac{1}{4}$ oz. chloroform, $\frac{1}{2}$ oz. ammonia, $1\frac{1}{2}$ oz. alcohol, 1 teaspoon pulverized borax; mix, shake well, and add 1 quart of deodorized gasoline; then bottle for use. This is a splendid cleaning compound to keep in the house. It will clean ribbons, neckties, ruching, carpets, greasy clothing, etc. For paint, soak the spot in kerosene oil, and then apply this mixture.

No. 2.—Scrape $\frac{1}{2}$ oz. Castile soap, dissolve it in 1 quart warm water, and as it cools add $\frac{1}{2}$ oz. glycerine, $\frac{1}{2}$ oz. sulphuric ether, and 1 oz. alcohol; keep in well corked bottles. Excellent for grease spots, etc.

No. 3.—Take 1 drachm alcohol, $\frac{1}{2}$ drachm chloroform, $\frac{1}{2}$ drachm sulphuric ether, 1 pint deodorized benzine; mix, and add enough cologne to give a pleasant odor. This is excellent for cleaning cloth gloves, felt hats, coat collars and is useful to keep on hand for removing grease spots, etc. Make double the quantity if desired.

No. 4.—Take fresh calcined magnesia, and mix it into a thick paste with pure benzole. Keep in a wide mouthed, tightly corked bottle. Apply to grease spots, etc., and, when quite dry, brush off.

No. 5.—Equal parts of ether, alcohol and strong ammonia form an excellent cleaning compound.

No. 6.—Grate a potato to a pulp, and add water in the proportion of a pint to a pound; let stand, and when clear pour off the clear part, and bottle. Apply to grease spots, etc., with a linen rag, and follow it with spirits of wine.

Lightning Eradicator.—Into 3 cups warm water put 2 oz. finely shaved castile soap, 2 oz. strong ammonia water, 2 teaspoons powdered saltpetre; mix well, and let stand 4 days before using, keeping it in a wide mouthed, well stoppered bottle. Rub it well into a grease spot, and rinse then with clean water. Useful also for washing delicate colored articles. Diluted with water and sprayed on plants it will kill any insects which infest them, and act as a fertilizer as well. It may also be added to the water for shampooing the head.

Scouring Balls.—Dissolve $\frac{1}{4}$ lb. white soap (shaved fine) in spirits of wine; add $8\frac{1}{2}$ drachms of turpentine and the yolks of 4 eggs; add enough magnesia to make it stiff enough to form into balls. Moisten the stain, rub with the ball, let dry, and wash with soft water; repeat if needed.

Black Reviver.—(1) Take 1 quart of water, and add 2 oz. powdered Aleppo galls, 2 oz. logwood, and 1 oz. gum arabic; boil till reduced $\frac{1}{2}$; then add 1 oz. sulphate of iron. Useful to renovate faded mourning dresses, old black coats, trousers, etc. (2) Put a quantity of fig leaves in water, and boil till the liquid is reduced $\frac{1}{2}$; apply it with a black cloth. Useful to take stains out of black cloth.

CEMENTS, PASTES, GLUES, ETC.

Cement for an Aquarium.—Take by measure 10 parts of litharge, 10 parts of plaster of paris, 10 parts dry white sand, and 1 part finely powdered resin. Mix them with boiled linseed oil into a pretty stiff putty when wanted for use. This will stick to wood, stone, metal or glass, and harden under water. Do not use the tank for 3 days after cementing it.

General Utility Cement.—A splendid cement is made by mixing together litharge and glycerine to the consistency of syrup. It will resist acids, water, heat and cold. Let the cement fully harden before using the article. It is a general utility cement, and will hold lamp tops, stone jars, stop cracks in iron kettles, etc.

Cement to Attach Glass and Metal.—Mix together 1 oz. spirits of turpentine, 2 oz. linseed oil varnish, and 4 oz. of thick glue; then put them in a close vessel and boil. Apply to the glass and metal, fasten them firmly together, and let dry for 3 or 4 days.

An Extra Cement.—One of the strongest cements known is made by mixing

powdered flint glass, ground to an impalpable powder, with the white of an egg.

Colored Glass Cement.—If finely pulverized chalk is stirred into a solution of soluble glass until the mixture is fine and plastic, a cement is obtained which hardens in 6 or 8 hours and possesses remarkable durability. It may be used for about the same purposes as plaster of paris, but is much harder and stronger. If some coloring matter is substituted for part of the chalk different colored cements result. Thus vermilion will make a splendid red cement; carmine, a violet; cobalt blue, a blue; carbonate of copper, a bright green; gray antimony, a dark cement; zinc gray, a hard gray cement which, burnished, appears like metallic zinc, and can be used to mend zinc vessels. The cement also sticks to stone, wood and metals.

Cement for China, Etc.—Mix plaster of paris into a strong solution of gum arabic until it attains the right consistency. Apply with a brush to the fractured edges, and let it dry for 3 days. This cement is white and *very* strong.

Transparent Cement for China, Glass, or Earthenware.—A transparent cement can be made by dissolving Russian isinglass in gin with a gentle heat, and when it is fully melted and well mixed strain through a thin cloth; then bottle and cork tight. It will easily dissolve with a little heat, and should be warmed before using. Apply with a small brush to the edges of the broken ware, and then tie them together, letting it dry for several days before using.

Cement for Porcelain.—(1) Take 1 part of pulverized gum arabic, and 2 parts of finely-powdered oyster shells, and mix them together thoroughly. Keep in a tightly-corked bottle. For use, rub enough of this up with the white of an egg to make a thick paste, apply it to the broken edges, and dry with a gentle heat. (2) Another cement for porcelain is simply thick white-lead paint.

Cement for Stone and Marble Slabs.—Mix hydraulic cement and water-glass together to a thick dough; apply to the broken edges and bind together until dry. It soon hardens, so that very little should be made at a time.

Cement for Glass.—Dissolve fine glue in strong acetic acid to form a thin paste.

Cement to Fasten Glass Letters Upon Windows, Etc.—Take 1 part India rubber, 3 parts mastic, and 50 parts chloroform. Let the mixture stand several days in a closed vessel, and apply rapidly.

Cement for Crockery, China, Marble, or Glassware.—Thoroughly mix lime and the white of an egg. Apply quickly to the edges, place them firmly together and it soon sets. Mix but little at once as it hardens quickly. This is *very strong* and easily made.

Cement for Stoneware.—Take a strong solution of cold alum water and mix plaster of paris into it. It sets slowly, but becomes very hard. Useful also for many other articles.

To Cement Wood to Stone.—Take 4 parts pulverized chalk, 4 parts pitch and 1 part beeswax. Melt and mix; warm before using. Apply thinly to the places to be joined.

To Cement Plaster of Paris.—Cover the broken surfaces with melted shellac, press firmly together, and leave till cold and hard.

Cement for Rubber.—(1) Dissolve strips of India rubber in naphtha, or sulphide of carbon, to a stiff paste. Naphtha should not be used indoors, or near a fire. Or (2) dissolve small pieces of gutta-percha in benzine to a thin paste. This makes an admirable water-tight cement for bottles by simply corking them and dipping the stoppers in it. It dries in a few minutes, and will mend rubber overshoes, etc., fasten backs on books, or rips in upholstery, and is generally useful. Keep in a tightly-corked bottle.

Cement for Hard Rubber.—Fuse together equal parts of genuine asphaltum and gutta-percha. Apply hot to the edges, and press together immediately.

Cement for Fastening Rubber, Gutta-percha, Leather or Cloth to Metal.—Take 4 lbs. of the best glue, 4 oz. of saltpetre acid, 4 oz. gum ammoniac. Warm the glue over a fire till it is all dissolved, then add the gum ammoniac and thoroughly mix. Now put in the acid and thoroughly mix. Have the metal surface warm and dry when applied.

Cement for Rubber, Leather, Cloth or Metals.—Fuse together equal parts of gutta-percha and pitch. Use hot. A valuable cement for various uses.

Cement for Leather or Rubber.—Dissolve 1 oz. gutta-percha in $\frac{1}{2}$ lb. chloro-

form. To apply, clean the parts with benzine, apply the cement to each part and let stand 20 or 30 minutes; then warm both by a candle flame, and squeeze together until dry.

Cement for Closing Cracks in Stoves.—Get finely pulverized iron at the druggist's, and mix with liquid water-glass to a thick paste. Coat the cracks with it and the hotter the fire the more completely will the crack be closed.

A Fireproof Cement.—Mix 2 parts sifted wood ashes, and 1 part air slacked lime, with sufficient boiled linseed oil to make a smooth paste. It hardens quickly to the solidity of stone, and can be used around fireplaces, stovepipes, chimneys, etc. It is waterproof also.

Waterproof Cement.—Take 4 oz. shellac and 1 oz. borax; boil in a little water until dissolved, and concentrate to a paste by heat.

Cement for Cracks in a Plastered Wall.—Take equal parts of water and silicate of potash; then mix in ordinary whiting to the right consistency. It may be applied with an old case knife; let it harden about 50 or 60 minutes; then smooth it off.

Cement to Resist Petroleum.—Boil 1 part of caustic soda and 3 parts of resin in 5 parts of water; afterwards mix in half its weight of plaster of paris or precipitated chalk. The plaster hardens in about 40 minutes.

Acid Proof Cement.—Take a concentrated solution of silicate of soda, and mix to a paste with powdered glass.

Rice Cement, Paste or Glue.—Mix equal quantities of rice and flour thoroughly in water and gently simmer the mixture over a clear fire. It forms a delicate and durable cement.

Japanese Cement.—Take rice flour or powdered rice and mix it intimately with cold water; then boil it to form a thin paste. It will be beautifully white, dries almost transparent, and is adapted for work requiring a strong and colorless cement. Also much less water can be used and in this way a preparation can be formed thick enough for modelling figures, ornaments, busts, etc.

Diamond Cement.—Place a tin dish in a pan containing boiling water, and put in it 1 lb. white glue and 1 quart soft water; when this is dissolved stir in 4 oz. white lead and boil till all is well mixed. Then take off the stove; after it is cold stir in $\frac{1}{2}$ pint alcohol. Bottle at once; keep tightly corked.

Cement for Bone and Ivory.—(1) Boil colorless isinglass in water till it forms a thick solution; then make to the consistency of honey by adding washed zinc white, and use. (2) Melt together at moderate heat, resin, white wax and oil of turpentine, till a thick fluid mass is formed. Color, if desired, with red lead, ultramarine blue, etc.

Cement for Ivory or Mother of Pearl.—Dissolve 1 oz. of isinglass and 2 oz. white glue in 30 oz. water; strain and evaporate to 6 oz. Add $\frac{1}{2}$ drachm of gum mastic dissolved in $\frac{1}{2}$ oz. of alcohol; add 1 oz. white zinc. For use, warm and shake well; also warm the broken edges.

Cement for Meerschauum.—Use quicklime mixed to a thick cream with the white of an egg.

Cement for Bottle Corks.—Use pitch, hardened by the addition of resin and brick dust.

To Weld Horn.—Pieces of horn may be joined by heating the edges until they are quite soft, and pressing them together until they are cold.

Waterproof Glue.—A glue which will be impervious to water may be prepared by boiling $\frac{1}{2}$ lb. glue in 1 quart of skimmed milk.

To Strengthen Glue.—(1) Mix powdered chalk into it. (2) It is said that white lead added to glue makes it waterproof, and strengthens it.

Liquid Glue.—Dissolve 2 oz. good glue in 4 oz. cider vinegar. If too thick, add more vinegar; if too thin, more glue. Easily made and good, but use genuine vinegar.

Liquid Glue for Labeling on Tin.—Take 1 quart boiling water; 2 oz. pulverized borax; add 4 oz. gum shellac and boil till dissolved.

Prepared Glue.—Take a wide-mouthed bottle, and put in 8 oz. best glue and $\frac{1}{2}$ pint of water. Set in a kettle of water and heat until the glue is dissolved; then stir in slowly $2\frac{1}{2}$ oz. of strong nitric acid. Keep tightly corked and it will be ready for use always, and very strong.

Marine Glue.—(1) Dissolve 20 grains of caoutchouc and 2 fluid ounces of

chloroform, and add 4 drachms of powdered mastic; let it macerate for a week. Keep cool and cork well. (2) Dissolve by heat 2 oz. of pure India rubber in naphtha; when melted add 4 oz. shellac; melt until mixed; pour while hot on metal plates to cool; when required to use, melt and apply with a brush.

Glue to Resist Fire.—Mix a handful of quicklime in 4 oz. of linseed oil; then spread on tin plates in the shade and it will become exceedingly hard, but may be easily dissolved over the fire and used as ordinary glue.

Preserving Mucilage and Paste.—A few drops of oil of cloves, or of alcohol, or any essential oil, will preserve a quart of the mucilage of gum arabic or gum tragacanth from turning sour. A little dissolved alum will preserve flour paste. Adding a little carbolic acid, will prevent mold in paste or mucilage. Anything strongly odoriferous, like bergamont, clove oil, etc., mixed in paste preserves it indefinitely from the attacks of insects.

Best Mucilage.—Dissolve gum tragacanth in water; then add a few drops of oil of cloves and a pinch of alum.

Mucilage for Labels, Etc.—Mix 2 oz. of dextrin, 1 drachm of glycerine, 1 oz. of alcohol with 6 oz. of water.

Fastening on Labels.—For attaching labels to tin and other bright metallic surfaces, first rub the surface with a mixture of muriatic acid and alcohol; then apply the label with a very thin coating of paste and it will adhere almost as well as on glass. Labels that are exposed to acid fumes or damp may be attached with any good paste, and, when dry, coated with copal varnish. If neatly done the appearance is very good, and the moisture and acids have no action on them.

A *strong mucilage*, which keeps well, is formed by mixing equal parts of powdered gum arabic and gum tragacanth, and dissolving them in dilute acetic acid.

Postage Stamp Mucilage.—Take 2 oz. dextrin, 1 oz. of acetic acid, 5 oz. water; dissolve them by the aid of heat, and add 1 oz. spirits of wine.

A Paste That Will Keep for Months.—(1) Take 4 oz. flour, $\frac{1}{4}$ oz. finely powdered alum, and mix very smoothly; then add water and boil gently. When taken off the fire stir in a drachm of essential oil of cloves. Put in a jar, cover over, and it will always be ready for use. (2) Boil gum tragacanth in water until thin enough for paste. Add a little cologne to prevent its molding. Excellent and strong; will stick to leather or cloth as well as paper.

Paste That Will Adhere to Whitewash and All Plastered Surfaces.—Soften 9 lbs. of finely-powdered bole in water; next boil $\frac{3}{4}$ lb. of glue, adding it to the above, with 1 lb. of gypsum. The whole is to be diluted to a thin paste. When putting fine paper on old walls it is well to coat them with a foundation paper, using this paste.

Paperhanger's Paste.—(1) To each pound of sifted flour add a teaspoonful of crushed alum, and mix with boiling water in the usual way, stirring constantly. (2) Use 1 pint of rye flour to 1 gallon of soft water; put it into the water while cold, put over the fire, and stir till boiling hot. Have ready 1 oz. of alum and $\frac{1}{2}$ oz. white glue, dissolved in water, and stir them in. Should the paste become thick as it cools, stir in boiling soft water till it is very thin. Excellent for everything but the most delicate papers. (3) Use clear corn-starch prepared the same as for starching clothes. A little carbolic acid added will guard against vermin.

A *HINT.*—Adding either copperas or cayenne pepper to the paste used for hanging paper will preserve it from the attacks of mice. Alum added to the paste, injures crimson colors in "flock papers," and should not be used for such.

Strong Paste for Pasteboard.—Mix 30 parts of starch and 20 parts of cold water till it becomes a perfectly smooth paste. Gradually add to this an equal amount of very *thin* hot glue, which must be kept at the boiling point. Add a little carbolic acid, and heat the whole mass for a few minutes.

Scrap-book Paste.—(1) Dissolve a piece of common glue, 2 inches square, in water; add as much pulverized alum by weight as there is of glue; then mix $\frac{1}{2}$ teaspoon of flour in water, stir it in, and boil all. When nearly cold stir in 2 teaspoons of oil of lavender. (2) Dissolve $1\frac{1}{2}$ teaspoons of powdered alum in enough water to make 1 pint of paste; when dissolved, pour it onto flour enough to thicken it as stiff as common paste; bring to a boil, stirring all the time; when done add a few drops of oil of cloves. Excellent. (3) Take $\frac{1}{2}$ pint of water, 3

drachms gelatine, 1 oz. rice starch; heat, with constant stirring, till the milky liquid becomes thick and glassy; add a few drops of oil of cloves. Keep in a tight bottle.

Paste to Mount Photographs.—Mix good starch with cold water enough to moisten it, and thin down to the proper consistency with boiling water; add a little camphor to keep it good; strain through a fine cloth to prevent any lumps.

To Stick Paper to Metal.—Dip the metal into a strong and hot solution of washing soda, and rub dry with a clean rag. Then apply onion juice to the surface of the metal and any paper or label will adhere very firmly.

To Make Sealing Wax.—*Red.*—Melt 1 lb. shellac and 2 lbs. resin; mix in $\frac{3}{4}$ lb. of Venice turpentine and red lead. Same proportion for less quantity. *Black*, the same, but color with lampblack instead of red lead.

Sealing Wax for Fruit Cans.—Take 8 oz. resin, 2 oz. gum shellac, $\frac{1}{2}$ oz. beeswax; melt all together. Melt and use as wanted.

Shoemaker's Wax.—Take 4 lbs. resin, 1 lb. pitch, 4 oz. beeswax, 3 oz. best sperm oil. Boil and pull.

INKS, STAMPING PREPARATIONS, ETC.

Preserving Ink.—Adding a little carbolic acid will prevent mold in ink; so will adding a few cloves; besides which the latter will impart an agreeable flavor to it.

Ink Powder.—Take 7 oz. copperas, 7 oz. gum arabic and 1 lb. nut galls; pulverize and mix. This amount of powder will make one gallon of good black ink. To prevent its molding, add 2 or 3 powdered cloves to each pound of powder.

Red Ink.—Half a drachm of powdered lake, and 18 grains of powdered gum arabic, dissolved in 3 oz. of ammonia water, makes one of the finest red or carmine inks.

To Improve the Color of Ink.—To 1 pint of common black ink add 1 drachm of impure carbonate of potassa. In a few minutes it will become jet black. Be careful the ink does not run over during the effervescence caused by the potassa.

Carbon Ink.—Use genuine India ink rubbed down with good black ink until it will flow easily from the pen. This ink resists chlorine and oxalic acids.

Drawing Ink.—Dissolve shellac in a hot water solution of borax, and rub up in this solution a fine quality of India ink. Dip the pen in alcohol and wipe dry after using. Very black, and indelible.

India Ink.—Take thin gum water, or a thin size of isinglass and water, and work into it enough of the finest lampblack to make a thick paste; scent it, if desired, with a few drops of musk, mold it into sticks, and leave it to dry. For common purposes it will equal India ink.

Blue Writing Fluid.—Dissolve basic or soluble Prussian blue in pure water. This is the most permanent and beautiful ink known.

Indelible Ink.—A strong solution of Prussian blue, dissolved in distilled water, with good ox-gall, makes an ink which turns black and cannot be erased.

Indelible Ink for Marking Cloth.—Take 1 oz. of rain water and dissolve in it 2 drachms gum arabic, 5 scruples nitrate of silver, and 1 scruple of indigo. Nothing better made. After marking the goods, heat with a hot iron or dry in the sun.

Ink for Marking Packages.—Take lampblack and mix it thoroughly with sufficient turpentine to make it flow freely from the brush. Powdered ultramarine instead of lampblack makes a fine blue mixture for the same purpose.

Invisible Ink.—(1) A solution of chloride, or nitro-muriate of cobalt turns green when heated, and disappears again on cooling. (2) Write with sweet milk or a solution of 1 teaspoon of white sugar dissolved in 1 cup boiling water. On heating it turns brown.

Gold Ink.—Take equal parts honey and gold leaf; triturate until the gold is reduced to the finest state of division possible; agitate with 30 parts water and allow it to settle. Decant the water and repeat the washing several times; finally dry the gold and mix it with a little weak gum water for use.

Silver Ink.—Use silver leaf instead of gold leaf and proceed as above.

Copying Ink.—Add 2 parts of glycerine to 4 parts of common violet ink. With good copying paper it will copy without a press.

Enduring Ink.—Take 1 gallon rain water, 6 oz. powdered nut-galls, 4 oz. copperas, 2 oz. gum arabic, 2 oz. brown sugar; powder, mix thoroughly, and shake occasionally for 10 days. Will endure for centuries and may be used for records, etc.

Indestructible Ink.—Mix 4 parts oil of turpentine and 1 part genuine Trinidad asphaltum; color with plumbago for black, or vermilion for red. Will resist fire, etc.

To Erase Ink.—To erase black ink use oxalic acid or javelle water. To erase ruling inks mix 1 oz. acetic acid and 1 oz. saturated solution of chloride of lime; use when fresh.

NOTE.—If in erasing ink the blue lines on writing paper are taken out also, they can be marked in again with a solution of common bluing such as is used in washing clothes, adding a little ox-gall to make it flow well.

To Restore Obliterated Ink.—(1) With a brush apply a solution of potassium ferrocyanide; if any of the iron of the original ink is left the writing will appear in blue. (2) If the paper has been immersed in sea or salt water, remove the salt by washing in warm water, and then soak it in a weak solution of gallic acid, say 3 grains to the oz. (3) Wash in clean water, and soak in a solution of photo-sulphate of iron (10 grs. to the oz.).

To Prevent Ink from Souring.—Add to each pint bottle a few drops of clove oil or carbolic acid.

To Preserve Steel Pens.—The acid in inks eats steel. If some pieces of iron or steel (like old pens, nails, etc.,) are put in the ink the acid exhausts itself on them, and will not thereafter attack the pens used. Pens stuck in lime or pearl-line when not in use, will be kept from rusting.

Stencil Ink.—Dissolve in a little boiling water 1 part borax and 1 part shellac; dilute to the consistency of thin syrup with hot water. To produce a red ink add logwood; for a blue ink add Prussian blue.

Ink for Leather.—Dissolve 1 part gum arabic and 1 part copperas in a little boiling water; add a little extract of logwood. Dilute with hot water if it gums.

Ink for Glass.—Rub up with strong gum arabic equal parts of iron scales (hammer scales) and lampblack. Can also be used on earthenware or china.

Ink for Zinc.—(1) Take 1 dr. sal ammoniac, $\frac{1}{2}$ dr. lampblack, 1 dr. verdigris, and mix with 10 dr. water. This is indelible on zinc. Or, (2) take 1 part gum arabic, 1 part dry bichloride of platinum, 10 parts distilled water; mix. This ink is black and resists acids or water.

To Mark Silver With a Black That Will Never Go Off.—Pulverize burnt lead; then incorporate it with sulphur and vinegar to the consistency of a paint, and write with it on silver plate. When dry, heat it a little before the fire and it is complete.

To Mark On Steel.—(1) Warm it and cover with a thin layer of wax or tallow. Then write with a pointed instrument which will penetrate through the wax to the steel. Then pour nitric acid over the surface and leave a few minutes, and wash off with water. Clean off the wax and the writing will appear engraved on the steel. (2) Another method is to dissolve sulphate of copper in water so as to make a liquid, like ink, and add a little sulphuric acid; write with this, using a quill pen; copper letters will be formed on steel or iron.

Copying Paper.—For a black paper make a thick paste by mixing cold lard or lampblack; spread the mixture on the paper with a cloth, and then rub with flannel until no more color comes off. For a red paper proceed in the same manner, but use Venetian red instead of the lampblack. For blue, use Prussian blue. For green, use chrome green. By using alternate sheets of writing paper and any of these sheets, and writing on the top sheet with a solid pen, several copies may be produced at once.

Copying Paper (German Process).—Soak 4 parts of the best glue in a mixture of 5 parts of water and 3 parts of liquor of ammonia till the glue is thoroughly softened. Warm it till the glue is dissolved, and add 3 parts of granulated sugar and 8 parts of glycerine, stirring the whole well and letting it come to the boiling point. While the mixture is hot, paint it with a broad brush on clean white blotting paper until the latter is thoroughly soaked and a thin coating remains on the surface. Let it dry for 2 or 3 days and it will be ready for use. The writing or sketch to be copied is done with aniline ink on writing paper. Before trans-

ferring it to the blotting paper, wet the latter with a sponge or brush and clean water, and allow it to stand for 2 minutes. Place the written side on the blotting paper, and press out air bubbles; after a few moments of gentle pressure, remove the written paper. A number of copies can then be taken; when the impressions grow faint, damp the surface of the blotting paper again. It works like a hectograph, and makes a fair substitute for that.

Powder for Stamping Velvet, Plush and Felt.—(1) Take 1 oz. English resin, 1 oz. gum demar, 1 oz. gum copal, 1 oz. gum sandarac, 3 oz. dry white lead. Mix. After stamping the goods wring a cloth out of gasoline and lay over the stamping for about half a minute; then remove, and let it dry in. New and excellent. This makes a white powder. Blue powder may be made the same way, except leave out the white lead; and substitute 1 oz. gilding powder and 3 oz. ultramarine blue. (2) Take equal parts of pulverized gum demar and white resin, and add enough Persian blue to color to suit.

To Gild Upon Silk, Satin, Etc.—Mix together 3 parts distilled water and 1 part nitro-muriate of gold in solution; dip a brush in this fluid, and trace out on the silk or satin, the pattern or design; while still wet, expose it to a stream of hydrogen gas; then wash in clean water and the gilding will be finished.

Common Sour is prepared by stirring into clean water sufficient oil of vitriol to make it taste sharp. Used in working various textile fabrics.

A Lubricator.—Mix 1 part of fine black lead, ground perfectly smooth, with 4 parts of lard.

A FEW USEFUL ARTICLES.

The following list is not intended to be complete, but is designed to call attention to a few very useful articles which may to advantage be kept on hand by housekeepers. All miscellaneous articles should be very clearly and plainly labeled, so that no mistakes can occur in their use, and most of them should be kept locked up in the storeroom, if there is one. See also the articles given under "Removing Spots and Stains."

Alum.—This has some medicinal properties, being good to stop nose bleed, check diarrhoea, etc. A hot solution of alum makes a most excellent insect destroyer, as elsewhere explained. It is useful for some cements, and if mixed with starch lessens the inflammability of clothing. It is a powerful astringent, and is used in medicine as such.

Borax.—This is a compound containing boracic acid and soda. It has many domestic uses. It will soften hard water, and is very useful in washing clothes, and if properly used will greatly reduce the amount of soap required. It does not injure the texture of the cloth like sal soda. If added to the water in which the hands are washed it keeps them soft and white. It will drive away many insects, and will be very useful to keep in the house. It is also used for settling mineral dyes.

Charcoal.—This has so many uses that it should be kept on hand in every family. Both the wood and animal charcoals are useful. The best wood charcoal is not made from either the hardest or softest woods. It should be pulverized while still hot, and kept in closely stoppered, wide-mouthed bottles, as it is nearly valueless unless fresh. It is an excellent deodorizer, makes a good tooth-powder, is valuable in preserving meats, etc., purifies water, and it has many medicinal virtues; especially for diseases of the digestive system. Its use is often referred to in our pages.

Disinfectants.—We have elsewhere discussed the merits of the more common disinfectants. The great value and importance of their use is now so well understood that every family storeroom should contain at least one or two of the more useful kinds, like carbolic acid and copperas or chloride of lime, and they should be freely used when occasion calls for them. Common salt is a great disinfectant. Soapsuds with salt added until it is a strong brine should be used for the first water when clothing is washed which has been used by a person sick with a contagious disease.

Javelle Water.—Dissolve 1 lb. saleratus in 1 pint soft water; then mix 4 oz. fresh chloride of lime in 1 pint water, stirring it to remove all lumps. It may not all dissolve. Pour the 2 mixtures together, stir and shake thoroughly; set

aside and when settled pour off the *clear* liquid and bottle for use. Use glass or earthen vessels in preparing it. Useful for bleaching or washing and removing various stains. The part which is left after pouring off the clear liquid can be used in cleaning the sink, white floors, wood tables, etc.

Lime Water.—Take a 2 gallon jar of pure soft water, and put in about 3 lbs. of unslacked lime; shake it well, and allow it to settle; pour off and bottle the clear liquid. This can be done 2 or 3 times until it ceases to taste of the lime; then add more lime. Lime is twice as soluble in cold as in hot water. A little of this water added to cream or milk will keep it from “turning.” Mixed with an equal quantity of milk, or much more, it is an excellent remedy for the bowel complaint in children, and irritability of the stomach, and, with a little of this added, milk will stay on the stomach when it would not otherwise. A little of it will prevent milk from “curdling” which would otherwise do so when heated, and it can thus be used for pies, etc. Bottles which have contained milk are sweetened by it. In fact it has many uses. Keep it in green glass bottles, and well corked, or it will soon lose its virtue.

Washing Soda.—The carbonate of soda, or “washing-soda,” is a strong alkali. This has so many uses that it should be bought by the quantity, when it can be obtained quite cheaply. Then keep it locked in the storeroom so that it will not be misused by the servants. To prepare it for use, put a pan on the stove and in it put 1 pint of the dry soda and 3 quarts of boiling water; leave it on the stove till fully dissolved, stirring it repeatedly; let it get cold, and then put it into preserve jars or wide-mouthed bottles, and label it plainly as “*Washing-Soda.*” Some of this used in washing the sink, sink brushes, dish-cloths, etc., will keep them delightfully clean and sweet. A hot solution of this, poured down the sink pipe from time to time, will prevent the formation of greasy deposits, as explained under “Sinks and Drains.” For the value of soda in washing, see our article on “The Laundry.”

Polishing Materials.—Whiting, rottenstone, flour of emery, tripoli, and lime are the 5 articles most valuable for domestic uses, and a small vial of each, plainly labeled, should be in every house. They are referred to and their uses more fully explained in our article on metal wares.

Uses of Tea Leaves.—Keep old tea leaves for a few days, then let them soak in a tin pail for $\frac{1}{2}$ hour; strain through a sieve and use the liquor for all varnished paints; it cleans and makes it look equal to new. Do not use it on unvarnished paints. It will also clean windows, oil cloth, and looking-glasses. The tea leaves, squeezed nearly dry, make an excellent thing to scatter on a carpet before sweeping it.

Uses of Newspapers.—These may be put to many more uses than many people imagine. They are good to clean glassware, like lamp-chimneys, windows, mirrors, etc., zinc, tinware, stoves and knives. The printing-ink on newspapers acts as a defiance to moths; therefore wrapping things in newspapers is a first-rate preservative. They are invaluable under the carpet, laid over the regular carpet paper. They are also invaluable to keep out the air. Ice completely enveloped in newspapers, so that all air is shut out, will keep a very long time. A jug of ice-water wrapped round in a newspaper with the ends of the paper twisted together to exclude the air will remain all night in any summer room with hardly any visible melting of the ice. In freezing ice-cream when ice is scarce, pack the freezer $\frac{3}{4}$ full of ice and salt, and finish with newspapers, and the difference in the time of freezing and quality of the cream is not perceptible from the result when the freezer is packed full of ice. Cover ice molds with newspapers, and they will retain the cold better than a packing of cracked ice and salt, which must have crevices to admit the air.

Oil.—To keep it from becoming rancid, add a few drops of ether. Rancid oil may be restored by boiling for about 15 minutes with a little water and calcined magnesia; or filter through freshly burnt charcoal.

To unite oil and water, adding a little salts of tartar (*i. e.*, carbonate of potash) is the best and cheapest medium to use. (An alkali will cut the oil into fine particles, and then they can be held in water as an emulsion.)

Anti-Corrosive Oil.—Put any quantity of olive-oil in a wide-necked bottle, and insert therein a few coils of very thin sheet lead; cork the bottle, and expose to the sun for 3 or 4 weeks; then pour off all that is quite clear. This oil will never

corrode nor thicken, and can be used for clocks, sewing machines, and delicate machinery.

INSECT PESTS.

The many insects which infest a house are a great annoyance to housekeepers. The following hints on the best ways to get rid of them will be helpful to our readers.

Ants.—(1) Slices of cucumber scattered about will drive away any ants, as well as crickets, cockroaches, etc. (2) Wet a sponge with any sweet syrup; when the ants flock to the sponge plunge it in boiling water, thus killing them. Then sweeten and set it again. (3) For red ants, grease a plate with lard, as they prefer that to sugar; put a few sticks around the edge, and when they flock to the plate turn it bottom up over the fire, and they will fall in with the melting lard. Then set the plate again. (4) Keeping a bag of sulphur in a drawer or cupboard will drive them away. (5) Cayenne pepper blown into the cracks and scattered about repels them. (6) Apply with a brush to shelves and crevices where they congregate, very hot alum water, proportioned at 1 lb. alum to 3 pints water. (7) For black ants, scatter a few leaves of wormwood about their haunts; or pour benzoline down their holes. (8) Quassia chips boiled in water, and a very little soft soap added, will destroy black ants. (9) Rubbing shelves with carbolie soap is often effectual, and this is a good disinfectant also. (10) Sweet fern or cloves scattered about repels them. (11) Put a little sweetened water in a dish and stir in a little tartar emetic—only a little is needed; set it where they congregate and it will finish them. Don't let children get at this. (12) Pennyroyal, either an infusion of the plant or the oil, is disagreeable to ants and all insects. (13) Washing shelves, and while they are moist rubbing on salt thickly, drives away ants.

To Exterminate Ants from a Lawn or Garden.—(1) Pour carbolie acid water down their nests. (2) Boil 1 lb. of cape aloes in a gallon of water and add 6 oz. of powdered camphor. Excavate the ant-hill and pour in a quart of this, covering as much space as possible, and then fill the nest again. Where the nests cannot be found, dilute this largely with water, and sprinkle it over leaves, etc., through the nose of a watering can. (3) Tobacco water is effectual if poured on for a few nights till they disappear. (4) Puffing Dalmation insect powder into their holes every morning for a few days will usually clear out ants. (5) Another excellent exterminator is to take 4 oz. potash and $\frac{1}{2}$ lb. flour of brimstone. Set them in an iron or earthen pan over the fire until dissolved and united; afterwards beat to a powder. Infuse some of this in water and wherever sprinkled about the house or grounds the ants will die or leave. (6) Another plan is to punch a hole in the ant hill with a wooden stick or iron rod; pour a little bisulphide of carbon into this hole, and then fill it by pressing the earth around it; the fumes will penetrate the hill and exterminate the ants. As this is an explosive substance it must be used with care, but if kept away from the fire is comparatively safe. It is a volatile liquid, and its fumes are very destructive to animal life.

Anthrenus Varins.—This is an insect which feeds on almost any dry animal substance; whalebone, combs, horn scoops, etc., are often attacked by them. They often appear in museums, drug stores, etc. Bisulphide of sulphur will kill them in all stages. The odor of camphor will keep non-infested materials from their attacks.

Bedbugs.—Good fresh insect powder, freely used, will kill them. Either kerosene, benzine, gasoline or naphtha will be effectual if thoroughly applied to all cracks in bedsteads, etc. The foregoing 5 remedies are probably the best things, and are effectual. A strong solution of salt and water will kill them; then fill the cracks with salt. The alum solution given among the exterminators is effectual. So is turpentine, and so is oil of sassafras thinned with a little alcohol—use the red instead of white sassafras oil. The above are much better to use than Paris green and other strong poisons. The eggs are laid early in March. Apply the remedy freely, once in March and repeat in July or August, and they can be exterminated.

Bees.—(1) To destroy the black bees, place on the floor where they assemble 2 or 3 shallow tin vessels half filled with water, with strips of cardboard running from the floor to the edge. They run up the cardboard and perish in a watery

grave. (2) Cucumber peel scattered around is about the simplest and best thing to use.

Bites and Stings of Insects.—For the stings of bees and wasps, first extract the sting and then apply a paste made of soda and water. It gives almost instant relief. For fleas, bugs, gnats and mosquitoes, apply a preparation of 1 oz. of glycerine to 50 drops of *dilute* carbolic acid; or use carbolized vaseline; or use a solution of borax and ammonia, or strong alum water and glycerine. The juice of an onion, or anything "strong," if applied at once, will serve for any of these bites, always extracting the sting, however, of a bee or wasp. A paste of powdered ipecacuanha in water is excellent for bites of scorpions, etc.

Nettle Stings.—Examine the skin and remove all prickles, and treat the same as for stings of bees or wasps.

Black Beetles.—(1) Throw a mixture of Persian insect powder and powdered wormseed around where they frequent. (2) Use powdered borax, about $\frac{1}{2}$ lb. to each room. Scatter it about freely, and *particularly* blow it in cracks and crevices where they can hide. It makes them emigrate. Those which it kills may be swept up afterwards without injury to carpets or furniture. Repeat once a week until they disappear. (3) Camphor dissolved in spirits of wine and painted over their haunts is often an effectual remedy. (4) Cucumber peel scattered about is one of the simplest and best methods of getting rid of them. (5) Onions chopped up, mixed with borax, and spread on bread will fix them. The onion attracts them and the borax kills them.

Bristle-Tail or Silver-Fish.—These little silvery insects feed on silken clothing, tapestry, and often books. Good fresh insect powder will kill them. So will sulphur.

Cabbage Worms.—Dissolve $\frac{1}{4}$ lb. of saltpetre in 2 gallons of water, and apply with a sprinkler. If one application is not sufficient apply again.

Caterpillars.—(1) Boil together equal quantities of wormwood, rue and any cheap tobacco. Make the liquid strong. Sprinkle it on young leaves and branches every morning and evening while the fruit is ripening. (2) Hang pieces of woollen rag on every tree and bush. The caterpillars will congregate on them, and are then easily destroyed.

The Carpet Beetle (also called Buffalo Moth).—Gasoline, naphtha, kerosene and benzine are all efficacious—probably benzine is the best to use on the whole. When they once infest a house it is difficult to get rid of them wholly without energetic measures. Take up the carpets, steam them or spray them well with benzine, and spray around the baseboards and in the cracks in the floors with benzine, or pour it from a can with a small nozzle—a stream the size of a knitting needle is enough, as only a little is needed. Then fill the cracks with a moderately thick mixture of plaster of paris and water before relaying the carpet. This will keep others out of the cracks. Pepper is disagreeable to the moths, and scattered on the floor before relaying the carpet will tend to keep them from laying a new batch of eggs there. Placing strips of tarred roofing paper around the borders of the room and using carpet lining furnishes probably the best protection. Near the baseboards is the most vulnerable part. Apply the benzine there at once if they begin work. The steam generated by pressing a very hot iron on wet cloths laid on a carpet also kills both moth and larvæ. Benzine will kill them on clothing, covered furniture, etc., and also apply it freely in chests or drawers in which infested clothing has been stored.

The insect was introduced into America from Europe in 1872. The moth lays an egg which hatches into a larvæ, and that does the mischief. Its worst work is done in June, July and August. The insect feeds on the pollen of various shrubs, and is particularly fond of *spirea*. When this insect appears it is not best to have that plant near the home, as the moth will fly from that to the house and lay its eggs.

Cockroaches.—(1) Sprinkle borax plentifully in their haunts, not 1 or 2 times, but renew every day for 1 or 2 weeks; it banishes them. (2) Lay the parings of green cucumbers at night where they congregate; repeat each night and in a short time they disappear. (3) Sprinkle hellebore on the floor at night; it finishes them. (4) Camphor gum scattered where they frequent banishes them. (5) Sprinkle liberally where they rendezvous 37 parts borax, 9 parts starch, and 4 parts cocoa, thoroughly mixed. (6) Inject into the cracks, and apply with a brush to the woodwork about their hiding places, the strong, hot solution of alum given among the exterminators. It is good also for bedbugs and other insects.

Crickets.—(1) Scatter cucumber parings about and they will disappear. Probably the simplest thing. (2) Trap them in a covered box with a perforated lid containing a little salt or oatmeal. (3) Half fill some jam pots with water and set at night as a trap for them.

The "Death Watch."—This is a species of beetle which attacks furniture and sometimes food. The noise is made by rapping the wood with its head. Wood-work may be protected from their attacks by washing it with a solution of corrosive sublimate and alcohol, or carbolic acid water. Books, etc., may be fumigated with the fumes of burning sulphur, or exposed to the odor of carbolic acid. Benzine will kill them.

Earwigs.—Place a length of hollow bean stalk or other hollow tube where the insects collect, and each morning empty them into boiling water by blowing through it sharply. Their favorite food is dahlias, roses, carnations, etc. For protection, place flower pots on the top of stakes. Tie a piece of wood dipped in oil around the stake, and also around the flower stalk about a foot from the earth. This will prevent their climbing up.

Fleas.—To drive from the bed, scatter dried camomile flowers about the bed, or sprinkle the bed or night dress with a little spirits of camphor, or a few drops of oil of lavender. To keep from the person sponge yourself with a solution of $\frac{1}{4}$ ounce camphor and $\frac{1}{2}$ ounce tincture of myrrh in 1 quart of water. Shake well before using. On animals oil of pennyroyal will certainly drive them away, or where the herb abounds use a decoction. Wash or sprinkle them with it. Remove and burn old straw, litter, etc. On hogs sprinkle the above on their backs and ears while they are feeding. Carbolic acid is also good, and so is Persian insect powder, or Ceyenne pepper.

Flies.—A castor-oil plant or Japanese lily growing in a room will kill many and drive away the rest. Laurel oil spread on picture frames, curtains, etc., will afford protection. Boil 1 oz. of quassia chips in 1 pint of water for 10 minutes; strain and add 4 oz. molasses. This will attract and destroy them. Insect powder if blown about will clear a room. Wood ashes thrown into drains and on heaps of rubbish destroys their eggs. On animals, a strong infusion of smartweed applied with a sponge or brush will keep them off for 24 hours. Or, apply soapsuds containing a little carbolic acid. It is said that a branch of elder bush hung in a room will keep out flies, as they detest its smell. Oil of lavender will drive them away. A mixture of sugar and borax will kill them. A paste made of 1 pint of laurel leaves and $\frac{1}{4}$ pint glycerine, and applied to window and door casings will rid a room of flies. Two applications will keep a kitchen clear for two weeks it is said. The smell is not deleterious to human beings; but the leaves taken into the stomach are poisonous. Stables can be freed from them by keeping the floor well swept and clean, and sprinkling on kerosene oil—using but little.

A good sticky fly-paper can be made by soaking paper in a strong solution of alum and drying it; then take boiled linseed oil and resin, melt it and add honey; then spread it on the prepared paper. Equal parts, by measure, of castor oil and melted resin, thoroughly mixed, and spread on writing or other non-porous paper, will destroy them.

Gnats.—Same as mosquitoes. Also the smell of turpentine is said to drive them away; saturate a rag and tie to the hat when fishing, or smear the hands and face with an ointment scented with it.

Harvest Bugs.—Smear the legs over with a decoction of colocynth; or apply 1 oz. insect powder macerated in 1 oz. weak spirit, and then diluted with $2\frac{1}{2}$ oz. water. The insects will not attack the parts thus smeared.

Insects on Trees, Shrubs, Etc.—These may be destroyed by tying brimstone (flour of sulphur) in a gauze bag, and sprinkling it over the plants.

Lice.—(1) Wash the part affected with water containing one part carbolic acid to 20 of water. Or, (2) use 1 part of sulphurous (not sulphuric) acid to 3 of water. The latter is excellent to destroy parasites on furniture, dogs, etc.

Mosquitoes.—(1) As a preventive, mix 50 parts of glycerine with 1 part of dilute carbolic acid, and rub it on the exposed skin. The smell of the carbolic acid may be disguised with a little lavender if desired. (2) Kerosene or any of the essential oils applied to the skin is a protection against these pests. (3) To keep from the bed, hang on the bedstead a few bruised leaves of pennyroyal, or a

sponge dipped in camphorated spirits, or lay over the head of the bed a cloth moistened with a teaspoonful of carbolic acid. (4) To drive from a room, burn camphor in a tin dish over a lamp so that it evaporates without igniting; or burn a little insect powder (*pyrethrum*) on a hot shovel, or sprinkle a little of it on a piece of burning camphor; or scatter oil of pennyroyal about the room. A bottle of pennyroyal left uncorked in a room over night will clear them out. (5) The castor-bean plant raised in tubs about the house or planted in the garden will rid the house of them.

Moths.—Benzine or gasoline will kill both moth and eggs, and can be applied without injury to carpets, clothing, etc. Good fresh insect powder freely applied, will protect clothing, feathers, furs, etc., as they cannot live where it is, but it does not kill the eggs. Moths in carpets may be killed by laying on a wet cloth and applying a very hot iron; the steam thus generated kills both moth and eggs; or sprinkle on benzine or gasoline, which kills them both.

The old-fashioned plan for protection was to rely on strongly aromatic substances, (the value of which consisted in the fact that their odor was disagreeable to the moths) such as camphor, cedarwood, tobacco, Russia leather, cloves, etc. (camphor and cedarwood being about the best) but the above is the most effectual treatment. If the insect powder is used, however, be sure that it is fresh and good. If the odoriferous substances are relied on, use enough to make the odor reasonably strong, as that is their only merit, and renew it when it becomes weak.

THE LIFE HISTORY OF MOTHS.—During the cold weather of the winter season the worms lie torpid; they are transformed into crystalids early in the spring, and in about 3 weeks they hatch out into the winged state. They fly about for a time and then lay their eggs, when they at once die. They always seek out dark places to deposit their eggs, which are very small—too small for the unaided eye to detect. After about 2 weeks these minute eggs hatch out into small worms which do the mischief, and which begin their work at once. As all moths work in the dark, articles which are in the light are not so much exposed to their depredations.

Slugs and Snails.—(1) Put salt on their trails (*not* tails). (2) Take cabbage leaves, soften them in an oven, cover with fresh dripping, and lay where they frequent. The leaves will soon be covered with slugs and snails and they can be destroyed. (3) No slugs will approach the smell of garlic, and a few pieces placed near plants, etc., will keep them away. (4) A piece of haircloth tied around the base of a fruit tree will keep them off. (5) If a few slices of turnip are laid about in the evening the slugs will gather on them and may then be destroyed. (6) Garden walls with salt sprinkled on top and at the bottom will not be troubled with snails crawling over them.

Wasps.—Put 1 or 2 tablespoons of pulverized commercial potassium cyanide into the entrance of the nest without disturbing it or the insects. They enter, never to come out again.

Weevils.—Weevils in beans, rice, wheat, and peas may be destroyed by subjecting the grain to a temperature of 130° to 145° for an hour. This does not hurt them for eating, but injures some of them for seed. Beans, etc., designed for eating can be treated to the hot bath. If a little bisulphide of carbon is put into the center of a bin, by means of a tube, the fumes will soon destroy all weevils or grain insects which may be within the bin. See what we say about the use of this substance under "Ants."

A Word About Exterminators.—Benzine and gasoline are among the cheapest and best insect exterminators known. They may be applied freely to clothing, carpets, upholstered furniture, mattresses, etc.; the odor soon evaporates, but all vermin are effectually destroyed. Their inflammability makes care necessary when ignition is possible. Insect powder kills moths, bedbugs, fleas, and small insects; the larger insects it does not kill. Hot alum water (1 lb. alum to 3 pints water) is death to all vermin where it can be applied, and is an excellent thing for common use. All insects dread pennyroyal; when the fresh herb cannot be gathered get the oil of pennyroyal; pour some in a saucer and steep cotton wadding in it, and place in bureau drawers, boxes, closet shelves, etc. Ants, cockroaches, etc., will soon disappear. Also excellent for brushing off the seed tick. Applied to dogs, sheep, horses, cattle and swine, it will keep off fleas, flies and mosquitoes. A decoction of 2 oz. lobelia seed steeped in 1 quart of water will also keep most insects off animals. Oil of peppermint in vapor is destructive to cockroaches, etc. Oil of cedar repels moths and is destructive to vermin.

The best disposition to make of dead insects is to sweep them up and throw them into the fire.

To Clear Fruit Trees from Insects.—Into 3 or 4 gallons of water put $\frac{1}{2}$ lb. tobacco, $\frac{1}{2}$ lb. sulphur, $\frac{1}{4}$ peck of unslacked lime; syringe the trees well with this mixture and it will effectually destroy blight.

Rats and Mice.—*Rats.*—Mix together 8 oz. strong cheese and 2 oz. squills, and place in the haunts of rats; they eat the cheese, the squills act at once, and the rats die immediately. Much better than the usual rat poison. Or, sprinkle cayenne pepper in their holes, or place a mixture of powdered glass and tar in their holes and run-ways. It banishes them. If they infest an empty house, scatter chloride of lime on the top floor—they will retreat to the one below; then scatter it there, and they will retreat to the next lower story. Drive them thus to the cellar; scatter there, and they will leave. Do not scatter in the lower stories first, however, as that only drives them up. After driving them out keep a little of the lime in the cellar and they will not come back—it gives a permanent riddance. In using any poison, place a shallow basin of water near it; rats or mice will at once run to and drink it, dying there instead of in their holes.

Mice.—Mix tartar emetic with pumpkin seeds, cheese, or some favorite food, and place for them. They will leave. Camphor gum mixed with seeds, or placed in drawers, trunks, etc., will preserve them from mice. They dislike the odor of camphor and keep away from it. Peppermint, or any other kind of mint, scattered about the shelves will keep them away, it is said. Pumpkin seeds make the best bait for mice traps. Ceyenne pepper will drive them away where it is scattered. Chloride of lime is as effectual with mice as with rats. Saturate a rag with a solution of ceyenne pepper and stuff it in a rat or mouse hole they will not touch it.

THE LAUNDRY.

There is probably no part of the regular home work which it is more difficult to have done right than that belonging to the laundry. Many or most of the women who claim to be good laundresses display an appalling ignorance of the subject, and the woman who trusts her work to them will often be dismayed at the result. Those who do their own washing will welcome every hint which will help them, and those who do not, should take pleasure in knowing how it ought to be done, for sooner or later it is sure to be of use to the possessor. The housewife should know why one article has acquired a yellow tinge, and what will eradicate it; why another has suddenly and unaccountably fallen into holes; and what is left undone to her table linen that it comes home without the bright, glossy look, which it ought to have. By the improved methods of washing now known $\frac{1}{2}$ the labor can be saved, and these we aim to explain, together with the best methods of handling various kinds of goods.

The laundry should contain 3 or 4 tubs (the paper or saw-dust being best, as they will not fall to pieces if kept dry); 2 or 3 pails for drawing water; a long smooth stick for stirring the clothes while boiling; 1 medium-sized tin pail; 1 large dipper; 1 large and 1 small basket; 2 cotton bags, 3 feet long and 2 feet wide, in which the most delicate articles can be placed before being boiled; 1 or 2 high wooden clothes-horses, and a line on which to dry clothes in bad weather; an ironing table; a closet for holding irons, ironing blankets, etc. In the closet should be kept 5 or 6 doz. clothes-pins (the wooden being much the best); starch and gum arabic; bags for straining the starch; bluing; $\frac{1}{2}$ doz. irons; 1 polishing iron; ironing blankets and sheets; a lump of beeswax wrapped in cloth; a board $1\frac{1}{2}$ feet long and 8 inches wide on which to iron shirt bosoms; a paper or cushion of pins; 1 bottle of kerosene or washing fluid, and 3 or 4 good iron-holders. The ventilation of the room should be especially attended to, so that the steam can be carried off without the necessity of a draft from an open door or window. Ventilators high up in the wall which can be opened and closed at will are best. Water must be convenient; either drawn from pipes, or from a pump or well. Rain water is the very best for washing, and should be caught and preserved if possible. Where soft water is used, only $\frac{1}{2}$ as much soap is needed for washing. We elsewhere explain how to soften hard water.

Washing Clothes.—By long custom Monday has become established as wash day. There are many advocates of Tuesday washing, however, and the latter has many advantages, as Monday can be devoted to sorting over the clothes, mending them, etc. Before being washed the clothes should be looked over, any needed mending done, and any stains from fruit, grass, etc., removed, as stains are much more easily removed before they are touched by soap (we explain elsewhere how to remove stains of all kinds). The clothes should then be arranged in lots, the laces and linens being put by themselves, the bed and body linen in another pile, table linen, towels and doilies, in another, colored dresses, socks and stockings together, and flannels by themselves. And now as to the washing. One of the best methods for reducing its labor is by the use of kerosene, as follows:

Kerosene for Washing.—Fill the boiler $\frac{2}{3}$ full of soft water and shave in 1 lb. of good soap. When the water boils and the soap is dissolved, add $2\frac{1}{2}$ table-spoons of kerosene oil. Now pick out the cleanest pieces, put them loosely into the boiler and let boil hard for 10 to 15 minutes, turning them occasionally; then take them out and put in the next cleanest, boil the same way, and so on until all are thus boiled. On taking out each lot look them over, and if there are any dirty spots on them rub them on the washboard, but usually no rubbing is required; then rinse them in clear, hot rinsing water, then in the bluing water, and then wring out for drying.

Do not put too many pieces in at a time. Should the water boil low, add more, and $\frac{1}{2}$ lb. of shaved soap and a tablespoon of oil. The kerosene takes out the dirt as if by magic, does not in the least injure even fine clothes, and leaves

no trace of its odor when they are dry. Some people measure the water on putting it in the boiler and add 1 tablespoon of kerosene to each pail of water used, and that is a good proportion, producing excellent results.

Washing Fluid.—The next best labor saving device is by the use of washing fluid, made as follows: In $\frac{1}{2}$ gallon of water dissolve 1 lb. of washing soda; add 1 gallon of clear lime water (have it from freshly slacked lime), stir together, let it settle, and then pour off the clear water; to this add 3 oz. borax dissolved in 2 pints boiling water; let it get cold and add 3 oz. pulverized carbonate of ammonia; when fully dissolved pour off into bottles, and cork tightly. To use, add 1 cupful to each 6 gallons of water; let the clothes soak in it over night, in the morning rub them a little if they need it (many of the cleanest ones will need no rubbing), run them through the wringer, then put them in the boiler and scald, then put them through the wringer again, pass through the rinsing water and hang out to dry. This saves half the work of washing, and is much less injurious to the clothes than most washing fluids (it is not nearly as hard on clothes as the old method of rubbing on the wash board which wears them out) and is greatly liked by those who use it.

Washing Fluid No. 2.—Take 8 oz. unslacked lime, borax the size of an egg, 1 lb. sal soda, and 1 gallon of water; bring it to a boil, remove from the fire, let settle, pour off the clear liquid and bottle for use. For use, into a boiler of cold water put soap and 1 teacup of this fluid. Put the clothes in dry, and when they come to a boil they are ready to take out; wet the next boiler of clothes, and put into the same suds; let them come to the boiling point, but do not boil; then rinse through hot water, and then in the bluing water. Some of these improved methods should be tried by housekeepers, and washing day will be robbed of half its terrors.

SOAKING CLOTHES.—Thoughtful women often ponder the question "To soak or not to soak?" The first action of soaking is to soften the dirt so that it is removed with less wear and tear to the clothes, but when soaked all night the objection is that it does too much. While the first action of the soap or alkali is to combine with the dirt and render it soluble, if allowed to stand 12 hours or so it forms new compounds, less apparent to the eye, but harder to remove. This is often the reason that clothes have a dead, heavy smell after being done up. This is particularly apt to be the case if washing powders or washing fluids are used to soak them in.

WASHING FLUIDS AND POWDERS.—The washing fluids on the market usually contain ammonia or chloride of lime, and a proportion of borax, and the powders are usually made of soap too hard to dissolve readily, which is dried, crushed, and mixed with powdered potash or borax. If proper care is taken they can, however, be used. A tablespoon of either, stirred into a tubful of hard water before putting in the clothes, will soften it. But never on any account put any such powder into the water while the clothes are in it, as the strong alkalies they usually contain instead of at once dissolving in the water may settle on the clothes and eat holes in them.

WASHING WITH TURPENTINE.—Turpentine has been sometimes recommended as an addition to washing fluid. When applied in hot water to the bare arms of the laundress it is liable to be absorbed through the pores of the skin and cause illness, and hence it is best not to use it. Although it possesses some value as a detergent, the above fact should be borne in mind when its use is recommended.

THE HEIGHT OF TUBS.—It will save many a backache if the tubs are fixed at the right height. If you are tall raise the tub; if short have a little box or stool to stand on. Many women are careless about these little points and suffer in consequence.

Soaps.—A cheap hard soap can be made by shaving 4 large bars of yellow soap into thin slices; put it into 2 gallons of rain or soft water, and when nearly dissolved add 3 oz. borax and 2 lbs. sal soda; stir till all is melted, and pour into a shallow pan or large tub; when nearly cool stir in slowly 1 oz. liquid ammonia, mixing it well. Let stand 1 or 2 days, cut into cakes or bars, and dry in a warm place. It can be made for 3 cents a lb., and in less than $\frac{1}{2}$ hour, and is good for all household purposes. This recipe has often sold for \$5.

Soap No. 2.—In 3 pints cold water dissolve a 1 lb. box of pulverized lye; melt $5\frac{1}{2}$ lbs. of clean grease, and strain it through cheese cloth; when the lye-water is cool, and the grease cool enough to bear the hand, pour together and stir thoroughly until thickened. Pour into a box or dripping pan lined with greased paper, and let stand in a warm place for 24 hours; then cut into bars. Good.

Soft Soap.—Where lye is not readily made from wood ashes commercial potash is used. Dissolve 8 lbs. potash, broken small, in an iron kettle containing about 12 quarts of boiling water; melt the same weight of clarified fat in another iron kettle; into a clean barrel put 3 or 4 gallons of hot soft water, and then put in alternately a ladleful each of fat and lye, stirring it well each time to mix it

thoroughly; when it is all in, fill the barrel with hot water, stirring it in a ladleful at a time, and then stir till it is all creamy. Now let it stand in a cool place for 12 or 13 weeks, and it can then be used, making good soft soap.

Substitute for Soft Soap.—Put thin shavings of hard soap in water, simmer slowly until thoroughly dissolved, and remove from the stove while very thin; if just right it will be of the consistency of thick soft soap, is excellent for laundry purposes, and can be used by those whose hands are roughened by soft soap.

Soap Bark.—This is not appreciated by most women. It can be bought at any drug store, and is one of the best cleaning materials known and is suitable for almost any dark colored cloth; but it is liable to stain delicate colors, as it contains a little color itself. To prepare it for use; pour 1 quart of boiling water over about 5 cents worth of the bark, let it boil gently 2 hours, strain it through cheese cloth, and it can be used at once, or bottled for future use. Sponge out grease spots, etc., with it, and then sponge or rinse with clean water. Its cleansing power comes from the vegetable principle *saponine* which it contains.

About Soaps.—The fats of which soaps are made are composed of fatty acids combined with glycerides. When boiled with an alkali the fatty acids unite with the alkali and form a compound called soap, and the *glycerine* is set free. In soap factories this glycerine is saved and sold, and the glycerine of commerce comes largely from soap factories, which obtain it in this way. The soap owes its cleansing power to its ready solubility in water, and the fact that its alkali will then readily unite with the greasy matters which usually constitute "dirtiness," and they will then be soluble in water, so that the cleansing power of soap depends on the amount of alkali which it contains. Pure alkali would be injurious to both the skin and the fabric, but it is milder in its action when combined with the fatty acids (forming soap) although retaining its cleansing properties. *Soft soaps* are made with *potash*, and *hard soaps* with *soda*. The cleansing power of soft soap results from its excess of alkali. *Curd soap* is the purest soap of commerce. It is made of tallow, with a little olive oil to impart softness. It enters into the composition of many fancy soaps. *Windsor soap* (when genuine) is made with olive oil and tallow. *Castile soap* is made of soda, olive oil and water. When marbled, a little sulphate of iron and sulphuretted lye are added. *Carbolic soap* contains some carbolic acid, and possesses some disinfecting power. Cheap soaps are often "loaded" with *terra alba* (white earth), resin, etc. The latter, although it makes soap "lather" profusely, does not increase its cleansing properties, and is used as an adulterant.

Soap is best purchased in quantities and allowed to dry, as it then wears much longer. If dried too fast it will crack and break. The best way to cut cakes of soap in two is with strong thread or small twine, drawing it across and pressing it on the cake. It cuts it better than a knife, but a knife must be used to shave soap.

Hyposulphite of Soda.—This is a colorless transparent salt, and is sometimes recommended for use instead of washing soda. It possesses peculiar bleaching properties, and for fabrics bleached with chlorine it is used as a dechlorizing agent. If used in washing linen and cotton their appearance is much improved.

Rinsing.—The great object in rinsing clothes is to extract the soap, and they should be thoroughly rinsed until all the suds is removed. The water they are first rinsed in should be hot, as that extracts the soap much better than cold water ever will. If the soap is not all extracted it will combine with the bluing and give a yellow tinge to the clothes. On being taken from the rinsing water the articles are wrung out, and those to be starched are put in one basket (it is a good idea to first spread a large, clean cloth in it); the others are put in another basket and hung out to dry at once.

Bluing.—The amount of bluing used should be merely enough to overcome the yellow tinge. Put enough in the water to give it a pale blue color when a little is held up in the hollow of the hand, though some laundresses use more than others. Never let clothes lie in the bluing water; take 1 article at a time, dip it in once or twice, and wring it out, and so continue until all are done. Add a little blue from time to time to keep up the shade.

White goods, by the constant application of soap, and from other causes in the course of wear, manifest a tendency to turn yellow. The use of bluing is merely to overcome this and increase the apparent whiteness. For a good bluing: (1) Buy 5 cents worth of indigo blue at the drug store, powder and put it in a quart bottle, and fill it with clear rain water. (2) A ball blue can be formed by mixing finely-powdered indigo with an equal amount of starch, or less if a very deep color is desired; then make it into a paste with warm water, and form it into small lumps or cakes. (3) In 10 oz. water dissolve 1 oz. indigo-carmine and $\frac{1}{2}$ oz. gum arabic.

CLOTHES WRINGERS should be oiled carefully every week. Keep a little oil-can filled with machine oil for this purpose. Clothes will run through easily when the wringer is well oiled; but otherwise it will go hard and waste the strength. If color gathers on the rubber rollers it can be taken off by washing them with a small cloth wet with kerosene oil, and then with soapsuds.

Drying Clothes.—Before hanging clothes out to dry fold them to remove the creases of the wringer, and they will dry much better. Pocket-handkerchiefs

should be folded double and hung up, 3 or 4 above each other, taken down when half dry, rolled up tightly, clapped, and they are ready to iron. Table linen is treated the same way, taken down when very damp, carefully folded ready to mangle first, to give it a fine gloss, and afterwards ironed. Body linen is dried much more; if too dry it must be sprinkled with clean water very slightly, and rolled up for ironing or starching. Never allow articles to be pegged singly to the lines on a windy day; let them be doubled, or even quadrupled, and much trouble from dilapidated corners will be saved. Never, except in fine hot weather, dry starched articles out of doors, or they will lose half their stiffness. If the clothes are dried in the house try and manage so that they dry mainly during the night, when the laundress is out of the room, as the moist heated room is quite injurious.

Grass bleaching is the best way to whiten clothes that have got yellow from any cause. Spread them out on the grass, and if the sun is very hot, sprinkle them 2 or 3 times with water from the nose of a watering pot. It is best to take up the clothes every night and put them in a tub of cold water. The sun and air have a magical effect in whitening linen. After bleaching, they can be rinsed, blued, and done up.

Clothes Lines and Clothes Pins.—A galvanized wire clothes line is the best to use, as it need not be taken down, and there is no danger that it will break. Always pass a clean damp cloth along a clothes line to free it from dust, before hanging the clothes on it.

Wooden clothes pins are the best to use. A clothes-pin apron, made by facing a large square piece of cloth on the outside for a pocket, is much more convenient than a basket, as it allows free use of the hands. Clothes pins will be more durable if boiled a few minutes and dried quickly once a month or so.

Folding Clothes.—Clothes are best folded the night before ironing day, as there is then time to attend to all the little details. Skilful sprinkling makes ironing much easier. The water should be sprinkled on very evenly, not in great spots here and there. The quickest way is to take the articles as they come, without sorting them at all; sprinkle the first thing that comes to hand, then the next, and lay it on top, and so on until a pile is made; then push it away and make another, and so on. A small wisp broom, kept for that purpose, makes one of the best things with which to sprinkle clothes, as it scatters the water on evenly. When all are sprinkled, turn the first pile over, and carefully smooth and fold the garments, putting the different kinds together as far as possible. Roll up thin fabrics in muslin or a coarse towel to keep the outside from drying. Fold handkerchiefs and napkins but once, pull straight, lay them on top of one another, and roll up tightly in muslin. Roll towels the same way, but snap out the fringe before rolling, having it quite damp, as otherwise it is soon broken and worn off. Put the starched clothes by themselves, and do not turn them until just before ironing. The moisture is retained in the finer clothes by putting the sheets, etc., at the top of the basket. A thick cloth spread over the basket will keep it from drying.

Starching Clothes.—For boiled starch use 1 heaping tablespoon of good starch to each pint of water. To make: Wet 2 tablespoons of starch with 8 tablespoons of cold water, mixing it to a smooth paste; then add slowly, stirring all the time, 2 pints boiling water; then *boil* it (not simmer) 15 to 20 minutes, stirring it frequently (do not let it burn), and then strain it while hot through cheese cloth (it will have to be squeezed through). It should be used hot, and when you thin it use hot water.

To starch shirts or collars, wet the bosom, cuffs and collars; wring very dry, and starch while damp; rub in the starch well so as to have it go clear through, wring them in a dry towel, wipe off all starch left on the outside, spread out evenly, rub down with a damp cloth, roll tightly together, let them lie 2 or 3 hours, and iron. If a blister appears when ironing, damped the finger and moisten it clear through; it will then iron out if the starch goes clear through, but not otherwise.

Use thin starch for dresses, aprons and children's clothing, and have it rather thin for skirts; for table linen have only the thinnest kind imaginable. To make clothes very stiff starch them and dry; then starch them again and dry. This will make them very stiff and they will iron easily; it is better than to have the starch very stiff.

To prevent a crust from forming over starch put a close cover over it as soon as made.

There are hardly any 2 laundresses who proceed exactly alike in starching and ironing, and in hardly any department of housework is practice more essential to make perfect. Borax, salt, gum arabic, kerosene, butter, lard, white wax, soap, spermaceti and turpentine are all used by laundresses to mix with starch to give a gloss to the linen and prevent the iron from sticking. We prefer kerosene (1 teaspoon to a quart of starch), and for shirts and collars a little sperm or white wax also. Some use 1 teaspoon of strained gum arabic water to a pint of starch, and there are numberless combinations, like salt and lard, sperm and borax, etc., advocated and vouched for by different laundresses. Any of the preparations liked best can be added to the clear starch given above, to give a gloss.

"Cold Starching."—This is not as much used as "hot starching." To prepare cold starch allow 4 oz. starch to 1 quart of water; pour on a little water first, and let it stand, as it takes some time to dissolve; then add the rest, stirring all the time; strain through a muslin bag, and use. This would be thick, and would need diluting for many articles. A little borax and soap are sometimes added. Articles dipped in cold starch need no damping. They can be rolled up smoothly and ironed in about 10 minutes; if they get dry from being left too long they must be dipped in again.

Flour Starch.—Mix 3 level tablespoons of flour to a smooth paste with a little cold water; then add, stirring constantly, 1 quart of boiling water, and boil hard $\frac{1}{4}$ hour, stirring frequently; then strain through thin cloth and use. Many people use this for common calicoes.

Coffee Starch.—Make starch the usual way and add enough perfectly clear coffee to color it (about 2 cups); then strain it and add a piece of spermaceti the size of a pea. Use this starch for dark colored calicoes, muslins or percales.

Ironing.—In ironing it is a good idea to begin with some of the plain pieces like sheets and pillow cases which will get the irons in good condition for the starched articles; then iron the starched clothes, and then finish the plain pieces. Iron starched clothes until they are perfectly dry; they should be made very damp, but damp the other clothes but little. Iron dresses on the wrong side first, and finish on the right. Fine muslins are best ironed twice in opposite directions. Always iron laces and embroideries by the thread of the material.

To iron a shirt use heavy, well heated irons. Lay the back of the sleeve smoothly on the table, and iron each side; then iron the wrist band, first the wrong side and then the right side. Next iron the shoulder strap, then the neck band or collar. Now double the back of the shirt and iron it on both sides; spread the shirt out and iron all the front except the bosom. Now comes the bosom. If the ironing board is covered with woolen it will not stick to it. Lay on a thin cloth the first time the iron is passed over it; remove it, rub it with a damp cloth, and iron until the finish is satisfactory. A smooth, round-edged iron should be used to gloss it. Then hang up to dry well, fold neatly, and put away.

To iron a collar or cuff place it evenly on the table with the wrong side up, iron it lightly, turn it over and iron the other side, lightly first, more heavily next, and then very heavily and smoothly, polishing it well at last. Then curl up and put aside to get firm and dry.

Flat-irons which are rough or rusty can be cleaned by putting a little salt on a piece of brown paper and rubbing the hot iron in it; then rub the bottom of the iron with a little piece of beeswax tied in a piece of muslin and it will make it smooth. It is a good idea to rub each iron, before putting it back on the stove, on brickdust, sandpaper or salt, so that no starch may remain to be burnt on. Flat-iron holders should not be any thicker than necessary to protect the hand, as it is tiresome reaching around one too thick. It is a good idea to keep 3 or 4 on hand; a piece of leather from an old boot top inserted in the holder protects the hand well from the heat. Take irons from the stove and put them away as soon as the ironing is done; they are injured by being left on the stove. Always wipe irons thoroughly on taking them from the stove.

Enamels for Shirt Bosoms.—There are many "enamels" in use and each laundress can make for herself the one she likes best. We give a few. (1) Take 2 parts spermaceti and 1 part white wax; heat moderately until they are melted together. To use, add a piece of this mixture (enamel), the size of a walnut, to each quart of starch. (2) Put in a cup and melt slowly $\frac{1}{4}$ oz. white wax, $\frac{1}{2}$ oz.

spermaceti, 2 oz. hard stearine, and $2\frac{1}{2}$ oz. paraffine; then let it cool. Rub it over the article just before ironing. (3) Mix 8 oz. paraffine, $\frac{1}{8}$ oz. kerosene, $\frac{1}{8}$ oz. glycerine. Any of the foregoing enamels will produce good results.

Scorches, to Remove.—(1) For linen, take the juice of 2 onions, 2 oz. fuller's earth, $\frac{1}{4}$ oz. of white soap, $\frac{1}{2}$ pint of vinegar; boil all together, and, when cold, spread on the spot; let dry, and then wash. (2) For white goods, dip linen clothes in chlorine water, and rub well on. For cotton goods re-dye if possible, or on woolen raise a fresh surface. On silks, all efforts are nearly useless. (3) For linen, mix the juice of 2 onions and $\frac{1}{2}$ oz. of white soap, and spread it on. See also "Spots and Stains."

Yellowed clothes can be whitened by soaking them in buttermilk; then wash them with soap in lukewarm water, rinse in cold water, and dry them. Repeat if necessary. Soak coarse articles longer than fine ones, and for very fine articles do not have the buttermilk too sour.

A Useful Hint.—Always moisten with the tongue, on the wrong side, the button holes of starched collars, cuffs and shirts, just before attempting to button them, or put in cuff buttons. That will soften the starch slightly so that they will button *easily*, and the button holes will never tear out. Try it *once*, and you will always do it afterwards.

Washing Flannels.—The great difficulty in washing flannels, blankets, and all woolen goods is caused by the nature of the material. The fibres of the wool contain numberless little hooks, which, with rubbing and change of temperature become knotted together, causing a shrinkage and thickening of the fabric. There are 3 things to avoid in washing flannels. (1) Do not change the temperature of the water used from beginning to end, as it hardens the goods to take them from hot to cold water. (2) Never rub flannels as linen articles are rubbed as that causes the fabrics to knot together. Sop the articles up and down in the water and pull through the hands, and after each water squeeze as dry as possible with the hands, as the wringer may tend to make them harsh. (3) Never rub soap on flannels. Make a suds of lukewarm water (do not have the water so hot but what the hand can be held in it comfortably), and add 1 tablespoon of borax for each pail of water, as there is nothing better for flannels (at least for white ones) than borax. After washing, rinsing, and wringing as above directed, shake and pull the flannel into its original shape and hang it out to dry, in a current of air if possible. All flannel goods should dry as *quickly* as possible; if the weather is cloudy or gloomy it is better to dry them indoors. Take them in before they are quite dry, pull, fold them as evenly as possible, roll up tightly in a clean towel or cloth, and leave a short time. If left too long they will shrink, so that it is better to iron them the same day if possible. Iron them until they are quite dry, with irons which are not very hot. Flannels and blankets treated thus will remain soft and white until they are worn out. It is not best to use bluing in the rinsing water for flannels.

Never wash colored flannels with white ones. If the water is not too dirty they can be washed in the same suds after the white ones; otherwise prepare a separate suds for them. Never boil flannels. If the dye is inferior and the color runs, dissolve a handful of salt in the first water used.

Shrinking Flannel.—Flannels can be shrunk before being made up, by soaking them first in cold and then in hot water.

Washing Infant's Clothing.—This should never be made too stiff, as infants are often caused much suffering by carelessness in this regard. The skirts of robes and long petticoats may be more stiff than the bodices, as it helps them to hold their freshness longer, but the bodices themselves should, at the most, be wrung only out of water starch, and the bibs which come directly under the chin must have none at all. Trimmings of little skirts which should be of the softest lace must never be starched; they look pretty starched, of course, but beauty should be sacrificed to the little wearer's comfort. Flannels unless carefully handled soon become shrunken and discolored. When laid aside, if wet, they should be plunged at once into a tub of cold soft water, without soap or soda, and left to soak a few minutes, then wrung out and dried gradually; or they can be sent to the laundry where, after this preliminary soaking they can be treated as ordinary flannel.

Washing Stockings.—(1) Wash black stockings in strong salt water; then dry

them and wash again in another brine, finishing in clear water. If properly done the dye will not rub off. (2) Before being worn soak black stockings, both cotton and woollen, in cold water over night; the next day wash in 2 tepid waters, making a lather with soap before putting in the stockings, and adding 1 tablespoon of ox-gall to the first water; then rinse, in lukewarm water first, until the dye ceases to come out; then stretch them and dry in the shade as fast as possible. After once washing in ox-gall, borax will answer for future washings; use little soap. Do not leave the stockings long in any water. (3) Wash colored stockings in a lather in which a little alum is dissolved; do not rub soap on them, put them through 2 waters, and rinse in 2 more. A little vinegar or salt in the rinsing water will help to fasten and brighten the colors. Turn striped stockings inside out to dry, which will keep the color from running on the right side. (3) Wash black thread stockings in ox-gall; then rinse in vinegar and water.

Cleaning Silks.—Wash silk, or anything containing silk, in cool water; it is turned yellow by boiling water. Never let soap touch it, but a suds prepared with good soap can be used. Iron it between folds of linen; but do not let the irons touch the silk. Do not have the irons too hot. It turns dark if ironed wet, or even if very damp.

Pongee silk can be washed in a warm suds of soap; rinse well, and pass through a wringer, but do not twist or wring with the hands. Iron when quite dry with a quite hot iron, laying it between 2 damp pieces of muslin. Never boil or scald it. The reason it turns dark, as ordinarily washed, is because it is ironed wet; the hot iron turns the water to steam, and that scalds and darkens it. A silk which has changed color in washing can be partly restored by washing again as above directed. If a silk comes from the laundress covered with dark spots, it is because it was allowed to dry and then sprinkled, and the sprinkling shows; to remedy this, put it in water, dry it, and iron it when quite dry.

Black silk if not very dirty can be freshened by sponging it with weak borax or alcohol; if very dirty sponge with a decoction of soap bark and water; then hang out to dry. Iron it when dry, between 2 pieces of damp muslin. It can also be sponged with cold, strong tea, in which a little hartshorn has been put.

Black silk is renovated by using a weak solution of coffee water. This is the French process. Do not wet the silk too much, and rub afterwards with a soft handkerchief to restore the luster.

White or light colored silk of any kind can be cleaned (1) by rubbing them with slightly moistened cornmeal; lay the silk flat on a clean blanket, and treat both sides. (2) Rub with a dry powder composed of fine starch and a little laundry blue; then dust thoroughly. (3) Pink or cream colored silks can be cleaned by rubbing them with bread crumbs or chalk.

Old silks of any color can be cleaned with alcohol; on 1 tablespoon of whisky or gin pour 2 cups boiling water; when cool sponge the silk with it.

To Renovate Silk.—Potato water is good to clean all kinds. Grate the potatoes into cold spring water, say a large potato to each quart of water; 5 or 6 will do for a couple of dresses. If for very light silk, pare the potatoes; if for dark, merely wash them clean. The pan of water must not be stirred in the least for 48 hours; then, very steadily and slowly, pour off the clear liquor (but not a particle of the sediment) into a large open vessel; dip the pieces of silk into this liquid up and down a few times, without creasing them; then wipe them on a flat table, with a clean towel, first one side, then the other. It is well to hang each one, after dipping it, on a line, to allow the drops to drain off a little before wiping. Have a damp cloth to cover them with till all are done; then iron one way on the soiled side.

POTATO WATER.—This is excellent for cleaning cotton or woollen goods as well as silk. It can be made a little stronger than the above use, say, 2 potatoes to 1 pint water) and bottled for use at any time. The coarse pulp left after pouring off the clear liquid is excellent for cleaning carpets, curtains and other thick goods. Few people understand the value of potato water; it is one of the best things there is for light colored dresses, and no starching is necessary when it is used, because potatoes contain so much starch.

Silk handkerchiefs should be first soaked 10 minutes or more in cold salt and water; then wash in the same water; iron, when nearly dry, between folds of muslin. They can be washed in a cool soap lather also, but never rub soap on them. The reason white silk handkerchiefs turn yellow when washed is because they are boiled, or ironed wet.

If soda has been spilled on black silk an application of acetic acid will usually restore the color.

To Remove the Shine from Black Silk or Fine Black Diagonal.—Spread the article on a table or hard surface and rub the shiny place with a sponge wet with good cider vinegar until the shine disappears; then hang it up till dry in a shady place, and it will look nearly equal to new.

To Wash Silk Underclothing.—Add 1 tablespoon of liquid ammonia to each gallon of warm soft water; put in the silk garments and let soak $\frac{1}{4}$ to $\frac{1}{2}$ hour; then wash them with the hands, rubbing soap only on those places which are soiled most (never resort to washboard rubbing); then rinse in lukewarm water, then in another, wring out thoroughly, and hang out to dry. Take them in before they are quite dry, fold, let lie a few hours only, and iron (the same day if possible). Cover the silk with a piece of cloth and iron over that, not using a very hot iron and never letting it touch the silk.

Chamois skin underclothes are now sometimes worn, but we explain elsewhere about washing them.

Satin.—This can be cleaned (1) with benzine if greasy, or with borax water or alcohol. Always sponge it lengthwise—never across the width. It will not be injured by having the iron come in contact with it, but press it on the wrong side. (2) Mix 2 parts white honey, 1 part white soap, and 4 parts whisky; spread the satin on a clean marble slab, bring the mixture to the boiling point, and apply it while hot with a soft brush. Rinse with cold water till it runs off clear; do not wring, but put it between 2 linen cloths till nearly dry; while damp, iron with a hot iron. It will look like new.

Linen.—Grey or buff linens may be prevented from spotting by stirring 1 tablespoon of black pepper into the first water in which they are washed.

To restore linen (1) apply a large handful of refined borax which has been diluted with 2 gallons of boiling water, and it will become a beautiful white. (2) If linen has turned yellow take 1 gallon of milk, put in 1 lb. white soap, shaved fine, dissolve it over the fire, and then put in the linen, and boil $\frac{1}{2}$ hour; take it out, wash it in a lather of soap and water, and rinse it through 2 cold waters, with a very little blue in the last.

Wine stains can be removed from linen by holding them in milk which is boiling on the fire; many other stains can be removed the same way.

To remove mildew from linen, rub on soap, scrape chalk on thickly, and lay in the sun; repeat till the spots disappear.

To Wash Woolen Goods.—Careful experiment has established the following points: (1) The liquid used for washing should be as hot as possible. (2) For removing greasy dirt, sweat, etc., borax is useless. The best thing is soap lye and ammonia mixed. This dissolves the dirt, raises and revives the colors, and is most excellent. (3) For white woollens, nothing else approaches borax. Soap lye and borax, applied boiling hot, give white woollens a beautiful looseness and dazzling whiteness. (4) To avoid shrinkage, press the woollens repeatedly between soft cloths to hasten the drying. They are best dried in a current of air, and in cold weather in a warm place not too near the stove. Never dry them in the sun, as they then become dry and hard.

For colored woollens put on the stove 7 quarts soft water and add 2 oz. best soft soap (the strength may be adapted to the dirtiness of the goods); when hot, and properly dissolved and stirred, divide into 2 vessels; to 1 add 1 teaspoon of ammonia to each quart of the solution, and while it is very hot put in the woollens; stir and press them with smooth wooden stirrers, as the hand cannot bear the heat; then transfer to the other vessel, to which no ammonia is added, which will be partly cooled, and here press the goods with the hands, but do not wring or twist them; then remove, and press them between 3 or 4 soft dry towels, until these no longer become wet; then dry quickly in a current of air, but not in the sun.

For white woollens proceed as above, but instead of the ammonia add 1 teaspoon of powdered borax to each quart of the mixture. If the second half of the solution is made too soapy, it may be diluted with a little hot water.

If the washing is large, after thus washing 2 or 3 lots of woollens, heat the second half of the mixture again, add borax or ammonia, and use it to put the goods in first, preparing a fresh solution to serve as the second to which the

goods are transferred; that which was before used as the first solution can be put away to settle. If you wash woolen goods thus you will be charmed with the results. The method is the result of much experiment.

To Clean a Woolen Hood.—(1) Use gasoline; dip in the hood and squeeze (but do not wring) until the gasoline looks dirty; then dip it 2 or 3 times in clean gasoline, rub it between the hands, and when clean squeeze as dry as possible; then hang on the line, or shake till dry. As gasoline is very explosive never use it near a fire or lamp. (2) Rub it well between the hands with dry flour or cornmeal, shake well in the open air, and it will look like new.

To Clean White Woolen Shawls or Soiled Lace.—Put them in a steamer, over a kettle of strong soapsuds, and steam them in that way.

Dry Cleaning of Flannel and Woolen.—Rub it well with dry cornmeal and it will look fresh and clean; white and light colored goods may be cleaned in this way.

Zephyr shawls and other goods can be cleaned thus, with either cornmeal or dry flour.

Washing Lace.—Stitch a piece of muslin firmly around a bottle or piece of wood; baste the lace to this, winding it around the bottle, and cover with thin muslin; then let it soak for a time in melted soap and water, and then pour the water over it several times; if very dirty it may be steamed at the side of the fire; then rinse it well, blue, dip in the water in which a little rice has been boiled, and leave it to dry. When unwound from the bottle it has only to be picked over a little, and either pressed between the covers of a book or ironed with a very cool iron on the wrong side.

Colored Silk Lace.—This should be first soaked for an hour in cold soft water, containing a teaspoon of salt to the pint of water; then wash it in a cool lather made of soft water and good soap, like curd or white windsor (if you have no soft water add borax to the lather), squeeze the lace through this several times until clean, and leave it in for a time; then rinse it in clear water containing salt as at first, but no soap. If you wish to stiffen it, rinse it in a weak gum water or sugar water. Squeeze it as dry as possible, and iron it on the wrong side between folds of clean cloth.

Lace Curtains.—These should have the dust shaken from them, and then put them into lukewarm soft water in which good white soap has been dissolved. Wash gently with the hands, changing the water until it is no longer clouded with dirt; rinse them, pass through the bluing water, and put through a wringer or squeeze them dry, but do not wring by twisting with the hands. Before washing them measure the length and width of the curtains and as soon as they are starched (use boiled starch, and have it blued a little) pin them to clean sheets fastened to the carpet in some unused room, stretching them to the exact size they were before being wet. Do not iron them, but dry as quickly as possible. Conduct the whole process quickly, as lace shrinks on being wet a long time. Or they can be pinned to sheets stretched on quilting frames; set the same as for quilting, on four chairs set in the hot sun. Some sew up their curtains between sheets, and boil them till clean, then rinse, blue, starch, and dry as above directed.

Many professional cleaners boil lace curtains until clean, in acids and other strong chemicals. They look beautifully when sent home, but their texture is ruined and they soon wear out, so that it is better when practicable to wash them at home.

To Wash Ecru Lace Curtains.—Put 5 drops ox-gall in 4 gallons warm soft water; soak the curtains in this $\frac{1}{2}$ hour, and then draw them through the hands a few times so that all parts will receive the same friction; rinse in another water prepared the same way, and run them through a wringer. Dry them pinned to sheets fastened to the carpet as directed above. When dry, fold them down the center, then again several times, and put them for 2 days under a weight. They will look like new.

Thread and Valenciennes Lace.—This can be washed by letting it soak well in soft water in which castile soap is dissolved; sop it around in it occasionally. When well washed, pass it through the bluing water containing a little gum arabic to stiffen it. Squeeze lightly with the hand, but do not twist it, and pin it on a stiff cloth, with a pin in each loop, and dry it in the sun. Do not iron it. Valenciennes can be tinted by rinsing it in weak coffee instead of clear water;

have a little gum arabic in it to stiffen. Saffron water can be prepared by pouring boiling water on saffron; by regulating its strength laces can be dipped in it and tinted any shade from deep yellow to pale cream.

To Wash Black Lace.—Mix bullock's gall with sufficient hot water to make it as hot as you can bear your hand in it, and pass the lace through it; it must be squeezed, not rubbed. Rinse through 2 cold waters, tinging the last with a little blue. After drying, put it into some stiffening made by pouring boiling water on a very small piece of glue; squeeze out, stretch and clap it. Afterwards, pin out on a linen cloth to dry, laying it very straight and even, and taking care to open and pin the edge very nicely. When dry, iron on the wrong side, having laid a linen cloth over the ironing board.

To Starch Lace.—Use a very thin boiled starch, or the liquor in which rice has been boiled. Dip the lace in the starch and squeeze it out. Clap between the folds of a towel to partially dry it. It is always ironed on the wrong side. Lay it on the table, wrong side up, and slightly picked out, and place a piece of muslin over it. Rub a cool iron over several times until a little dry. Take it up, and with the fingers pick it out to show the pattern and the edge; iron again, pick out once more, carefully draw to each side and give a final ironing. The iron must be very cool, or the lace will be stiff; moving it about in the hands and drawing it out tends to make it flexible.

To Tint Curtains or Laces.—Put no bluing in the starch, but for ecru mix the starch with water tinted with coffee; for a yellow tint use saffron, and for a pink tint use a decoction of logwood.

To Revive Black Lace.—(1) Make some black tea about the strength usual for drinking, and strain it clear from all leaves. Put the lace in a basin, pour on sufficient tea to cover it, and let it stand 10 or 12 hours; then squeeze it several times, but do not rub it; dip it frequently into the tea, which will at length assume a dirty appearance. Have ready some weak gum water, and press the lace gently through it; then clap it for $\frac{1}{4}$ hour; then pin it upon a towel in any shape you wish it to take. When nearly dry, cover it with another towel and iron it with a cool iron. The lace will now look as good as new, if it was merely discolored but sound. (2) Wash the lace thoroughly in some good beer; use no gum water; then clap the lace, and dry and iron as in the previous recipe.

To Clean and Renovate Black and Colored Veils.—(1) Use whisky; then stiffen with gum arabic water, clap between the hands, and lastly iron between 2 moist linen cloths. (2) For black veils take 1 pint warm water, add a little ox-gall, and dip the veils into it; rinse them in cold water. Then make a weak size by pouring some boiling water on to a small piece of glue. Into this hot size dip the veils; draw them out quickly, clap them, and stretch them on frames, or pin them to dry.

To Clean Black Lace.—Proceed as explained for cleaning black veils.

Brussels lace should be kept away from perfumes, and from the air.

To Wash Gingham, Prints and Sateens.—To wash gingham, prints and sateens (but not light cambrics) proceed as follows: Use no soap, but for 2 dresses mix 1 cup flour in 2 cups cold water; then add $3\frac{1}{2}$ quarts boiling water and it will make 1 gallon of flour starch. Into a tub containing 4 gallons of warm water put 2 quarts of this starch; then put in 1 of the dresses and wash it, rubbing it just as if soap was used; then rinse it through 2 clean waters, wring out and hang out to dry. The cloth will be cleaned by the starch, and will retain enough of it to be stiffened sufficiently. Then wash the other dress the same way. Dry colored goods thoroughly, and only dampen them a few hours before they are ironed. Iron them on the wrong side. Put $\frac{1}{2}$ cup of salt in the last rinsing water if the colors run. If the color is blue and faded, adding to the last rinsing water 4 tablespoons of vinegar or 2 of acetic acid, will sometimes restore it; but as the chemicals used in the dyeing are not always the same, it will not always work. Do not let the fabrics lie in the water but wash them out quickly. A piece of alum the size of a walnut added to each pint of starch is sometimes used to preserve the colors of gingham and calicoes; they are also sometimes dipped in salt and water before being put into the washing water, to prevent their fading.

To Clean Satins or Sarcinets.—(1) Thoroughly mix 4 oz. of soft soap, 4 oz. of honey, the white of 1 egg, and a wineglass of gin. Scour with a stiff brush, using

the mixture; when clean, rinse with cold water. Do not wring the satin, but hang it up for a while, and iron it while still damp. (2) Scatter French chalk over them and brush it off with a hand brush once or twice. (3) Sponge on the right side with dilute spirits of wine, sponging with the nap, not across it. Iron on the wrong side, while damp, placing muslin between the fabric and the iron. Do not clean at home satin which is to be dyed. (4) Mix sifted stale bread crumbs and powder blue, and thoroughly rub it all over the satin; then shake well, and dust it with clean soft cloths. Then, if there are many silver or gold flowers, rub them with a piece of crimson ingrain velvet, which will restore them to their original luster.

To Clean Velvet, Velveteens or Plush.—If only slightly soiled free them from dust by brushing, and then sponge them with benzine, or a weak solution of borax and water. If much soiled, sop them up and down in benzine to which a little water is added; then brush over the *back* with a strong solution of gum arabic and water; this stiffens it and prevents the pile from loosening; let it dry slowly but thoroughly, and then brush the pile smartly until it stands up, and in the right direction. Thus treated, faded and greasy dress trimmings may be made to look like new.

To Wash Colored Muslins.—Use a lather of cold water and soap; if they are black, put in a little salt; if green, a little vinegar, and if lilac, a small quantity of ammonia. Do not use warm water even for rinsing them.

Crape, to Restore.—Skimmed milk with water, with a little bit of glue in it, made scalding hot, is excellent to restore rusty Italian crape. If clapped and pulled dry afterwards, like muslin, it will look as good as new. Or, brush the veil till all the dust is removed, then fold it lengthwise, and roll it smoothly and tightly on a roller, steam it till it is thoroughly dampened, and dry it on the roller.

To Make Old Crape Look Nearly Equal to New.—Hold it in both hands, and pass it backwards and forwards several times through the steam coming from the spout of a violently boiling tea-kettle; it will make it look fresh and new.

To restore black crape when spotted by being wet, by the rain or otherwise, spread it out on the table with a piece of black silk underneath the spots; then carefully paint over the stains with a soft camel's hair brush dipped in black ink; carefully wipe off the superfluous ink with a piece of black silk; when dry, the stains will be gone.

Crapes, bombazines and mourning goods can be freed from stains by using a solution made by boiling a handful of fig leaves in 2 quarts of water until it is reduced to 1 pint.

Black Cashmere.—This can be washed in borax water; rub it with the hands merely, not on a board. Press out the water, but do not twist or wring it; or fold it evenly and pass it through a wringer; then hang out to dry. Press it out when dry.

Black Grenadine.—This can be renovated by using cold, strong coffee, strained clear; wring it out tightly, shake well, and fold; to iron, put some black material under it, and use a moderately hot iron.

Nankeen.—(1) Wash nankeen garments with moderately hot soap-water; then boil them, rinse, but do not wring them out, and hang up to dry, inside out, in a shady place. (2) Let 1 oz. of green tea steep in the necessary amount of water 8 or 10 minutes; then, while hot, pour the decoction through clean linen cloth on to the nankeen article; let stand till cold, take out, but do not wring out, and dry it in the shade.

Washing Chintz.—Wash it in a suds of the best soft soap, containing a pinch of salt and 1 tablespoon of vinegar to the quart; rinse quickly in water containing a little salt and 1½ tablespoons of vinegar to the quart.

To Clean Glazed Chintz Curtains.—Shake off the loose dust, then lightly brush with a small long haired furniture brush; then wipe it closely with clean flannels, and rub it with dry bread. If properly done they will look nearly as well as at first, and if the color be not light they will not require washing for years; fold in large parcels and put carefully away. While up they should be preserved from the sun and air as much as possible—these injure delicate colors; the dust may be blown off with bellows. Curtains may thus be kept sufficiently clean to make up again with new linings.

To Clean Chenille Portieres or Curtains.—These are generally sent to a cleaning establishment, but to clean at home get 5 or 6 gallons of gasoline (worth about 15 cents a gallon), cover the curtain with the gasoline in a washing machine, if you have one, and wash about 10 minutes; if not, put it in an ordinary tub and sop the curtain up and down in it till well cleaned; then squeeze dry, shake well to get out the wrinkles, and hang in the shade to dry. Gasoline is *very* inflammable, and must *not* be used *near* a fire. A good place to use it is in the yard on a clear day. The gasoline can be allowed to stand and settle; then pour off the clear part and keep tightly bottled for further use. It will not injure the most delicate colors, and can be used to clean gloves, white shoes or silk. The curtains can also be cleaned by using equal parts of boiling water and benzine instead of the pure gasoline, if more convenient.

Faded Hangings, to Restore.—Beat out the dust and brush them; make a strong lather with castile soap, and apply with a hard brush; then with clean water wash off the lather, and then wash them over with alum water; let dry, and the colors will usually be restored.

Gold and Silver Embroidery and Fancy Work.—This should not be cleaned with alkaline and acid solutions, as is so often done—it frequently destroys their beauty. Use instead, spirits of wine, either alone or diluted $\frac{1}{2}$ with water.

Bed-Ticks, to Clean.—Apply poland starch by rubbing it on thick with a cloth; place it in the sun; when dry, rub it if necessary. The soiled part will be clean as new.

Coat Collars.—These when greasy, may be cleaned by saturating them with benzine, and leaving it on until the grease is out; then wash off with soap and water, or ammonia and water. Gasoline and turpentine also cut the grease readily. Another way is to apply ammonia with a sponge, and then rub well with a dry cloth; repeat the operation until the collar is clean. See also the cleaning compounds given elsewhere.

Bleaching.—(1) Dissolve 1 lb. of chloride of lime and 1 tablespoon of sal soda in soft water; put in 30 yards of cotton cloth, leave $\frac{1}{4}$ hour; then take out and rinse *thoroughly* in soft water, as the solution will rot it if not all removed. (2) In 1 quart of soft water dissolve $\frac{1}{4}$ lb. chloride of lime; bottle, and cork closely. To use, dilute what is needed with an equal quantity of water; it will remove stains from table linen which resists milder treatment. (3) Into 4 quarts of boiling water put 6 cents worth of oxalic acid; pour it over the clothes, stirring them up well, and leave till the water is cold; then spread out to bleach on the grass, and they will soon whiten. Use oxalic acid carefully as it is very poisonous. (4) Chloride of lime acts with difficulty on animal substances, so that for woolen or mixed goods, after washing and while still wet, put them into a solution of hyposulphite of soda, and let them soak several hours; then take them out and put them into a solution of tartaric acid, which should be ready prepared; keep the vessel well covered, as the action of the acid on the hyposulphite develops sulphurous acid, which bleaches the articles. Then wash in water containing ammonia, which increases their whiteness.

Setting Colors.—Most colored fabrics are improved by soaking them for some time before being washed in a solution of 1 tablespoon of ox-gall to each gallon of soft water. Ox-gall sets any color in cotton, woolen or silk.

French linens can have the colors preserved by putting them in a strong clean tea of common hay.

Calicoes with blue or pink colors can have the colors set by putting *soda* in the rinsing water. *Vinegar* can be used the same way for pink or green. *Salt* is good for all colors but blue, but it injures that. A little *saltpetre* in a pail of water will set the color in blue cambric. Soaking calicoes, cambrics or muslins for 2 hours in a solution of 1 oz. of sugar of lead to the pail of water is good for all colors but blue. *Alum water* is used for setting greens and blues.

Black goods can have the color improved by putting them into a solution of 1 teacup of lye to a pail of water. Dark hosiery, cambrics, etc., can have the colors set by soaking them 2 hours in a pail of water containing 1 tablespoon of black pepper.

Scarlet napkins, red table cloths, and red-bordered towels, can have the colors set by putting borax in the water in which they are washed. Putting colored napkins in a weak lye before washing them sets the colors.

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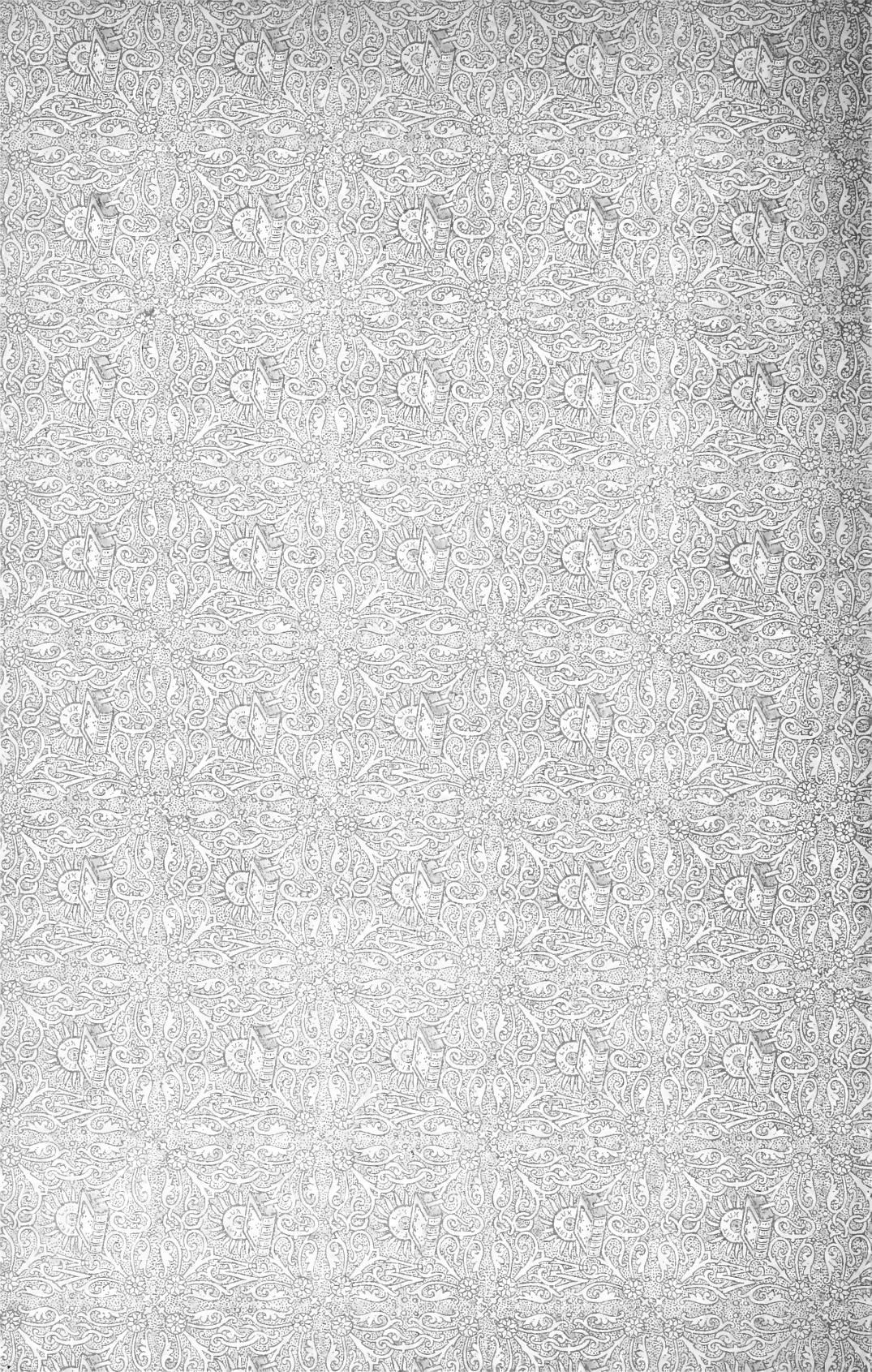
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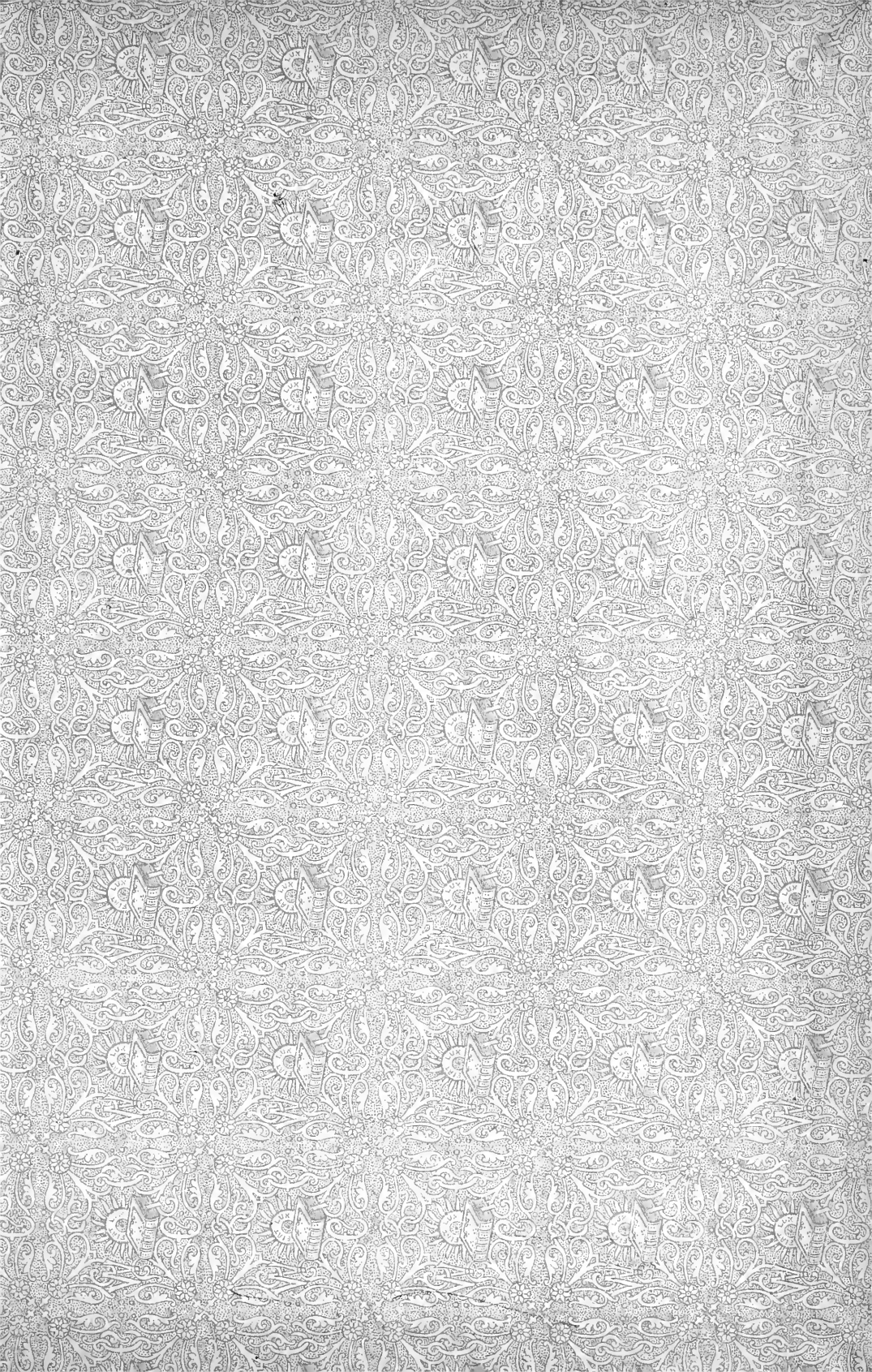
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